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PAPER TRADE JOURNAL

Vol. LXXXIII, No. 5 JULY 29, 1926 Per annum, $4.00 Per copy, 10 cents

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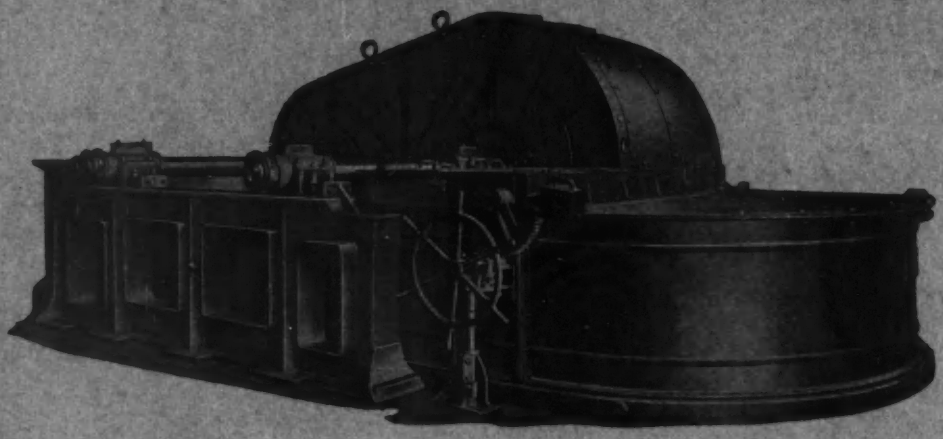

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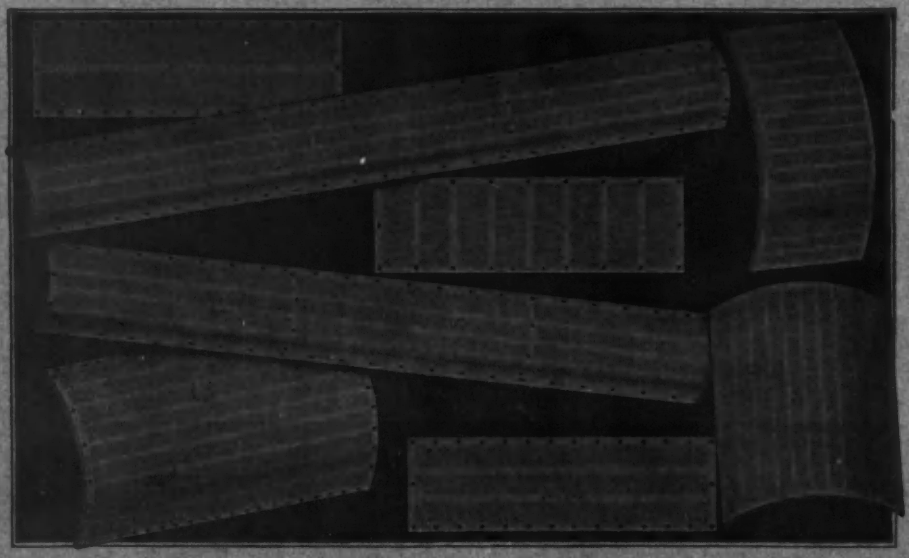

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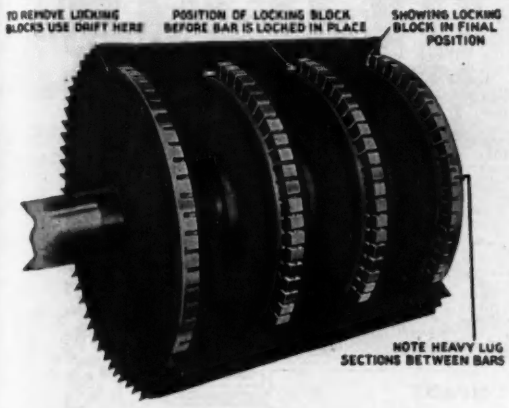
Entered as second class matter August 13, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. ESTABLISHED 1872 FIFTY-FIFTH YEAR Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., E. Stroudsburg, Pa
EXECUTIVE AND EDITORIAL OFFICES: 10 EAST 39th STREET, NEW YORK CITY. CHICAGO: 123 West Madison St., Chicago, Ill.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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-FIFTH YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., Inc.

LESLIE R. PALMER, President — GEO. S. MACDONALD, Vice-President & Treas. — F. K. HOPPIE, Secretary

Executive and Editorial Offices: 10 East 39th Street, New York

Chicago Office: Room 14, Suite 410, 123 West Madison St.

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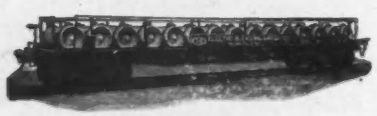

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With Which Is Combined

Vol. LXXXIII, No. 5

The Magazine of the Paper Industry

Thursday, July 29, 1926

7,807,000 Tons of Paper Produced in 1925

Commerce Year Book, Just Issued by the Paper Division of the Department of Commerce, Shows Paper Output for 1925 Was Greater Than in Preceding Year—Paper Group Now Ranks Seventh in Value of Products, Among the Leading Manufacturing Industries of the United States, According to Bureau of Census Statistics

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 28, 1926.—Paper production is completely reported only biennially. In 1924 estimated production was about 7,345,000 short tons, increasing in 1925 to about 7,807,000 tons, all classes sharing in the increase, says the Paper Division of the Department of Commerce in discussing the paper situation in the Commerce Year Book, which has just been issued. The Division continues:

The output of news print in 1925 was 1,526,000 tons against 1,471,000 tons in 1924. Average prices showed no marked changes from the previous year; news print was steady at about 4 per cent below the level of the last half of 1924. The total value of imports of paper base stocks, paper, pulpwood, and printed matter in 1925 was $252,000,000, the greatest ever reported. In quantity, imports of news print were slightly more than 2 per cent greater than similar imports in 1924, while imports of pulp and other stocks increased about 10 per cent. Exports of paper and paper products in 1925 increased 2 per cent in value, while exports of books and other printed matter increased over 5 per cent.

TABLE 1

PAPER AND PRINTING INDUSTRIES

Note.—The cost of materials and value of product involves much duplication due to the use of the product of one establishment as material for another. Value added by manufacture is a net figure.

Industry and year	Establishments	Wage earners (average number)	Primary horsepower	Wages	Cost of materials	Value of products	Value added by manufacture
				Thousands of dollars			
Total:							
1899.....	26,627	298,744	899,012	140,753	214,566	607,904	393,337
1914.....	37,196	452,900	2,038,582	296,493	580,715	1,456,046	875,331
1919.....	36,403	509,875	2,345,949	564,510	1,306,718	3,012,584	1,705,866
1921.....	25,355	467,072	(1)	637,128	1,331,324	3,148,747	1,817,423
1923.....	25,775	526,795	2,742,697	742,658	1,543,059	3,769,986	2,226,927
Paper and wood pulp:							
1899.....	763	49,646	761,943	20,746	70,530	127,326	56,796
1914.....	718	88,457	1,611,954	53,246	213,181	332,147	118,966
1919.....	729	113,759	1,849,699	135,691	467,483	788,059	320,577
1921.....	738	105,294	(1)	127,029	445,992	667,436	221,443
1923.....	746	120,677	2,178,623	151,477	573,727	907,347	333,620
Manufactures of paper not made in paper mills:							
1899.....	1,194	45,455	24,918	15,197	37,354	71,417	34,063
1914.....	1,759	79,368	85,670	36,176	102,277	190,568	88,291
1919.....	1,967	94,759	117,815	77,408	253,742	463,914	210,172
1921.....	1,880	80,278	(1)	76,519	224,416	414,895	190,479
1923.....	1,958	99,278	135,910	99,765	306,210	558,882	252,672
Printing, publishing, and related industries:							
1899.....	24,670	203,643	112,151	104,810	106,682	409,161	302,478
1914.....	34,719	285,075	340,958	207,070	265,258	933,331	668,073
1919.....	33,707	301,357	378,435	351,411	585,492	1,760,610	1,175,118
1921.....	22,737	281,500	(1)	433,581	660,916	2,066,417	1,405,500
1923.....	23,071	306,840	428,164	491,416	663,121	2,303,757	1,640,635

(1) Not called for in schedule.
Source: Bureau of the Census.

Census Statistics of the Industries

The group of pulp, paper, printing, and allied industries ranks seventh, from the standpoint of value of products, among the 16 major groups into which the Bureau of Census divides manufacturing industries. The value added to materials by manufacture in these industries in 1923 was $2,226,927,000, or about 9 per cent of the total for all manufacturing industries combined. Data for 1925 are not yet available. Much of the largest of the individual industries in the group is that of printing and publishing (Table 1).

Pulp, Paper, and Paper Manufactures

According to the census of 1923 the pulp and paper industry employed nearly 121,000 wage earners and its products (involving some duplication) were valued at $907,000,000. There were 1,828 paper-making machines in the United States in that year with a total annual capacity of 9,725,000 tons as compared with 8,614,000 tons in 1921. The actual production of paper during 1923 having been reported by the census at 8,029,000 tons, it appears that the great bulk of the capacity was active at that time. Corresponding data for 1925 are not yet available.

Pulpwood Consumption and Wood Pulp Production

The paper consumed in and exported from the United States in 1923, the great bulk of which is produced from wood, is estimated by the United States Forest Service to have required the consumption of 10,204,000 cords of pulpwood. The amount of domestic pulpwood consumed in our own paper manufacture was 4,637,000 cords while pulpwood, wood pulp, and paper imported, chiefly from Canada, represented the equivalent of 5,567,000 cords. The proportion of our paper supply derived from domestic pulpwood is, on the whole, decidedly declining. In 1909, for example, 70 per cent of the total was domestic.

TABLE 2

SOURCE OF PULPWOOD USED FOR PAPER CONSUMED IN AND EXPORTED FROM THE UNITED STATES

[Wood pulp and paper, imported or exported, converted into terms of pulpwood. In thousands of cords.]

Item	1899	1904	1909	1914	1919	1921	1923
Pulpwood Consumed							
Total	2,075	3,397	4,572	6,071	7,426	6,888	10,204
For:							
Domestic requirements	1,950	3,259	4,420	5,886	6,806	6,649	10,009
Export	125	138	152	185	620	239	196
Source:							
Domestic	1,617	2,476	3,210	3,642	4,446	3,740	4,637
Imported from Canada	420	763	1,025	1,630	2,741	2,378	3,911
Other imports	38	158	337	799	239	770	1,656
Per cent from each source:							
Domestic	78.0	72.9	70.2	60.0	59.9	54.3	45.4
Imports from Canada	20.2	22.5	22.4	26.8	36.9	34.5	38.3
Other imports	1.8	4.7	7.4	15.2	3.2	11.2	16.2

The domestic production of wood pulp in 1923 according to the Census, amounted to 3,789,000 tons (see Table 3), of which the great bulk was consumed by the plant in which produced for conversion into paper.

According to monthly returns from manufacturers estimated to represent 65 per cent of the output of mechanical pulp and 50 per cent of that of chemical pulp, production of the former was slightly less and of the latter slightly greater in 1925 than in 1924, the aggregate showing practically no change (Table 4).

Production of Paper

The total production of paper in 1923 was 8,029,000 tons, the largest figure ever reported up to that time and an increase of almost 50 per cent over 1921, when the industry had been severely depressed. The principal classes of paper, in the order of their tonage in 1923, were board, news, books, and wrapping paper, each of which accounted for more than a million tons. From the standpoint of value, boards ranks first, followed by book paper, wrapping paper, and news paper. The production of every major class distinguished by the census was much higher in 1923 than in 1921. The increase in box boards was over 60 per cent. The use of such boards for shipping containers is rapidly increasing.

TABLE 3

PRODUCTION OF PAPER AND WOOD PULP

[Quantities in thousands of tons of 2,000 pounds; values in thousands of dollars.]

Item	Quantity				Value			
	1914	1919	1921	1923	1914	1919	1921	1923
Total paper	5,270	6,099	5,431	8,029	291,588	673,049	585,735	812,509
News	1,313	1,324	1,237	1,521	52,943	98,559	114,315	110,865
Book	904	951	792	1,208	70,102	142,281	122,930	169,286
Board	1,292	1,867	1,740	2,793	44,870	124,091	104,347	182,867
Wrapping and bag	[1] 882	[1] 831	808	1,151	[1] 49,373	103,069	100,536	137,343
Writing	348	325	231	377	34,055	87,741	61,314	89,098
Tissue	115	191	186	251	11,536	40,696	33,647	44,144
Hanging	97	69	57	111	4,489	6,043	5,949	10,285
Felts and building	244	195	217	345	9,476	17,737	12,842	23,529
All other paper [2]	[1] 176	[1] 345	162	274	[1] 14,746	[1] 52,832	29,855	45,093
Total wood pulp including that made into paper in same mills	2,893	3,518	2,876	3,879	.....	.....	.....	.....
Wood pulp for sale or transfer to other mills	2,893	3,518	2,876	3,789	.....	.....	.....	.....

[1] Bag paper not reported separately; included in "All other paper."
[2] Includes plate, lithograph, map, wood cut, etc., previously included in "Book paper."
Source: Bureau of the Census, Department of Commerce.

Trade association data (Table 4) not covering all of the plants, indicate that the aggregate production of paper (including box board) increased in both 1924 and 1925, the increase being shared by all the major classes, but the data are not sufficiently complete to permit close measurement of the amount of change in output. The production was remarkably uniform from month to month.

TABLE 4

ESTIMATED PRODUCTION OF SPECIFIED KINDS OF PAPER

[In thousands of tons.]

Quarter or month	Paper							Wood pulp	
	Total	News print	Box board	Book	Wrapping	Fine	All other	Mechanical	Chemical
1924									
January-March	1,857	369	562	302	271	97	257	478	618
April-June	1,825	385	508	314	240	96	282	551	610
July-September	1,771	348	537	293	242	84	267	329	537
October-December	1,892	369	538	322	263	94	307	391	625
1925									
January-March	1,947	370	556	326	274	113	308	428	633
April-June	1,928	390	540	323	265	112	298	528	608
July-September	1,940	363	592	311	270	107	296	320	588
October-December	2,004	402	588	324	272	117	293	422	624
December, 1923	522	118	150	82	73	26	71	163	169
December, 1924	617	121	171	106	88	31	101	123	199
December, 1925	644	137	187	108	85	38	89	143	197

Source: Department of Commerce, Survey of Current Business, which see for original sources and method of compilation.

News Print

Annual estimates of the production of news print are made by the News Print Service Bureau; also estimates of the Canadian production. According to these data there was an insignificant decline in the output of news print in the United States in 1924, but in 1925 a considerable increase. Production in this country during recent years has been but little higher than before the war, while Canadian production, a very large proportion of which is shipped to the United States, has more than trebled, and is now about the same as our own (Table 5). During the last four months of 1925 Canadian news print production exceeded that of the United States.

Quarterly production figures on news print during the last three years (Table 6) show a continued steadiness from January, 1923, through the third quarter of 1925, with the exception of the third quarter of 1924, when the output was subnormal. In October, 1925, however, a notable increase which continued into 1926 became evident. Canadian news print increased proportionately at the same time. Imports of news print have increased uniformly since 1919, while exports in 1925 were considerably in excess of the exports during 1923 and 1924.

TABLE 5

NEWS PRINT PRODUCTION IN UNITED STATES AND CANADA AND IMPORTS OF UNITED STATES FROM CANADA

[Thousands of short tons.]

Year	Domestic production [1]	Imports from Canada	Canadian production	Year	Domestic production [1]	Imports from Canada	Canadian production
1913	1,305	219	350	1920	1,512	679	875
1914	1,283	310	415	1921	1,225	657	808
1915	1,239	368	489	1922	1,448	896	1,080
1916	1,315	468	608	1923	1,485	1,108	1,266
1917	1,359	559	686	1924	1,481	1,197	1,353
1918	1,260	581	735	1925	1,530	1,295	1,522
1919	1,375	624	803				

[1] Figures for census years differ slightly from those of the Census.
Sources: News Print Service Bureau; imports from Bureau of Foreign and Domestic Commerce.

TABLE 6

NEWS PRINT: PRODUCTION, EXPORTS, AND IMPORTS

[In short tons.]

Year	Production	Imports	Exports	Quarter	Production	Imports
1913	1,305,000	219,844	43,301	1924		
1919	1,374,517	627,734	110,268	January-March	370,850	332,928
1920	1,511,968	729,869	45,889	April-June	388,073	341,752
1921	1,225,235	792,508	16,812	July-September	350,323	330,121
1922	1,447,688	1,029,268	25,764	October-December	372,179	352,433
1923	1,485,000	1,308,843	16,357	1925		
1924	1,481,425	1,357,233	17,159	January-March	371,545	351,446
1925	1,530,318	1,448,425	22,738	April-June	391,408	373,537
Per cent increase from 1924	3.3	6.7	32.5	July-September	364,483	331,408
				October-December	402,882	392,034

Sources: News Print Service Bureau; exports and imports from Bureau of Foreign and Domestic Commerce.

Progress in Simplification

Simplified practice recommendations were adopted by several general conferences in the paper and pulp industry during the year. Grocer's paper bags were reduced from 6,280 sizes and varieties to 4,700, which was estimated to permit a potential saving of $600,000 a year in paper stocks alone. This simplification was also accompanied by the adoption of standards of capacity, technicians in the industry developing information which would enable any manufacturer, using any common type of bag making machinery, so to adjust his equipment as to produce bags conforming to these standards. The number of thicknesses of box board was reduced from 244 to 60, as the result of a simplified practice recommendation developed after several months of discussion. In this case, a large number of shipper organizations supported the program. In tissue paper, 34 sizes and varieties were reduced to 9 as the result of a simplified practice program adopted late in the year.

At the end of the year active work was being done toward the simplification of binder board, in which it was proposed to reduce 718 stock sizes and thicknesses to 5; and toward the simplification of bolt, nut, and rivet containers, knitted underwear containers, and millinery boxes.

Price Movement and Market Conditions

The Bureau of Foreign and Domestic Commerce has compiled a series of weighted index numbers of prices of wood pulp and paper, continuing the series instituted by the Federal Trade Commission (Table 7). The prices of round wood pulp and domestic bleached sulphite pulp fell greatly during the early part of 1924 and thereafter remained approximately stationary, until early in 1925, when a considerable increase took place. At the beginning of the second quarter, however, prices of ground wood pulp again receded and remained stationary until the end of the year, while sulphite pulp held the January level until fall when a further advance occurred.

News print during approximately the first half of 1924 remained at the same level as throughout 1923. There was then a slight decline, after which prices again remained steady, until the beginning of 1925, when a further decrease was evident. Prices then remained steady throughout the year. Book-paper prices declined somewhat in the latter half of 1924 and again in the spring of 1925; thereafter they were stationary. Demand for news print and book paper is but little affected by changes in the general level of business activity unless these go to extremes of inflation or depression.

The prices of wrapping paper and boards are somewhat more variable, and changes in the general level of business activity, even of a comparatively moderate character, affect demand considerably. The index for No. 1 jute manila paper, which had remained stationary during 1922 and 1923, fell considerably in the spring of 1924. In October and December of that year, however, this index was higher than at any time since early in 1921, and except for a temporary decrease in the spring this level was substantially unchanged throughout 1925. The price level of boards fell during the spring and summer of 1924 until the index reached 119.2 in July, as compared with 207.7 in April, 1923. The index closed the year at 126.9. At the opening of 1925 a steady increase was noted until well into the second quarter, when the index dropped a little below the January figure and remained steady to the end of the year. The changes in the index for boards during 1925 were due to those in strawboard and binders board prices, newsboard and pulpboard being steady.

TABLE 7

INDEX PRICES OF SELECTED CLASSES OF PULP AND PAPER

Month	News print	Book paper [1]	No. 1 jute manila	Boards [2]	Ground wood pulp	Domestic bleached sulphite pulp	All commodities, wholesale
1913: January	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1920:							
July	271.4	383.6	294.7	369.2	690.5	241.4	241.0
October	301.6	397.3	336.8	353.8	571.4	431.0	211.0
1921:							
January	316.7	287.7	189.5	153.8	333.3	275.9	170.0
July	248.4	209.0	168.4	101.5	128.6	189.7	141.0
1922:							
January	195.8	180.3	178.9	115.4	152.4	155.2	138.0
July	184.4	184.9	178.9	103.8	133.3	137.9	155.0
1923:							
January	195.3	198.6	178.9	192.3	209.5	155.2	156.0
July	197.9	195.2	178.9	176.9	166.6	155.2	151.0
1924:							
January	195.3	195.2	178.9	161.5	190.5	146.6	151.0
April	195.3	196.6	157.9	143.1	138.1	117.2	148.0
July	190 1	196.6	157.9	119.2	131.0	120.7	147.0
October	190.1	191.8	189.5	134.6	131.0	120.7	151.9
December	190.1	184.9	189.5	126.9	131.0	119.0	157.0
1925:							
January	182.3	184.9	189.5	134.6	142.9	129.3	160.0
April	182.3	181.5	178.9	146.2	133.3	129.3	156.2
July	182.3	181.5	191.4	133.8	133.3	129.3	159.9
October	182.3	181.5	189.5	133.8	133.3	137.9	157.6
December	182 3	181.5	189.5	133.8	133.3	137.9	156.2

[1] Based on average prices of machine finished and supercalendered book paper.
[2] Based on average prices of newsboard and chipboard.
Sources: News print index was based upon Federal Trade Commission quotations on weighted average contract price standard roll news, f.o.b. mill in carload lots, to and including the second quarter, 1923; all other paper and pulp index numbers compiled from minimum market prices as given in trade journals in their issues nearest the 15th day of the first month of the quarter. Wholesale price index from United States Department of Labor.

TABLE 9

EXPORTS AND IMPORTS OF PULP, PAPER, PAPER MANUFACTURES, AND PRINTED MATTER, AND IMPORTS OF PULPWOOD

Item	Quantity (short tons)				Value (thousands of dollars)			
EXPORTS	1913 [1]	1923	1924	1925	1913 [1]	1923	1924	1925
Total pulp and paper products	.....	.....	.....	.....	23,178	46,780	47,843	51,088
Wood pulp and other paper stock	36,748	78,705	92,709	126,456	1,399	3,222	4,091	5,716
Paper, except printed matter, total	[2]	[2]	[2]	[2]	11,367	24,561	23,823	24,334
News print	50,213	16,357	17,159	22,738	2,451	1,637	1,773	2,025
Book paper, including surface coated	14,317	15,286	10,970	10,575	1,607	3,607	2,585	2,496
Wrapping, including kraft	7,058	13,374	12,529	14,368	579	2,176	2,041	2,173
Writing, envelopes, and cover paper	[2]	5,318	4,040	4,134	1,351	1,962	1,500	1,606
Tissue, toilet and crêpe	[2]	4,605	3,663	4,393	[2]	1,598	1,299	1,563
Bristol board and straw board	[2]	29,085	36,010	16,754	[2]	2,839	2,877	1,711
Bags, boxes, and cartons	[2]	9,810	12,477	15,536	990	1,936	2,846	3,293
All other	[2]	[2]	[2]	[2]	4,390	8,805	8,902	9,467
Books and other printed matter, including playing cards	[2]	[2]	[2]	[2]	10,413	18,997	19,928	21,037
IMPORTS								
Total pulp, paper products, and pulpwood	.....	.....	.....	.....	[4] 51,929	226,996	235,691	252,163
Total pulpwood (cords)	1,036,894	1,347,917	1,279,975	1,483,231	6,955	13,405	13,108	15,130
Wood pulp and other paper stock	685,819	1,704,473	1,881,127	2,052,243	19,578	88,553	94,206	103,665
Paper, except printed matter, total	[2]	[2]	[2]	[2]	12,700	116,138	118,316	119,991
Standard news print	147,479	1,308,843	1,357,233	1,448,425	5,681	98,021	101,297	103,717
All other printing paper	5,684	8,975	13,355	8,305	950	1,140	1,126	809
Photographic paper	[2]	1,112	1,571	1,735	1,239	479	644	791
Wrapping paper, including grease-proof	[2]	45,610	25,540	11,124	741	4,203	2,092	1,164
Pulpboard and other paper boards	[2]	51,788	54,360	51,526	[2]	2,962	2,861	2,659
Cigarette paper	[2]	6,097	5,490	5,326	[2]	3,211	3,028	2,935
All other paper	[2]	[3]	[3]	[3]	4,089	6,122	7,269	7,916
Books and other printed matter	[2]	[3]	[3]	[3]	8,838	8,900	10,061	13,377

[1] Fiscal year 1913; calendar years thereafter.
[2] Data not available.
[3] Included in other groups.
[4] Includes value of $3,858,240 worth of unclassified paper stock for which no quantity figures are available.
Source: Bureau of Foreign and Domestic Commerce.

TABLE 8
NEWS PRINT PRICES
[Cents per pound.]

Year	January	April	July	October	Yearly Average
1913	1.92	1.94	2.01	1.99	1.96
1919	3.68	3.64	3.63	3.84	3.74
1920	4.36	4.73	5.21	5.79	5.10
1921	6.08	5.41	4.77	4.19	5.02
1922	3.76	3.57	3.54	3.61	3.62
1923	3.75	3.83	3.80	3.75	3.78
1924	3.75	3.75	3.65	3.65	3.70
1925	3.50	3.50	3.50	3.50	3.50

Sources: Federal Trade Commission to and including April, 1923; thereafter quotations published in the issue of trade journals nearest the 15th of each month.

Imports

Owing to the greatly increased demand for paper in the United States, especially for news print purposes, paper, paper base stocks, and pulp wood have become a very large item in our import trade. The total value of such imports (not including printed matter) in 1924 was $226,000,000, increasing in 1925 to nearly $239,000,000. The single item of news print in 1925 was valued at $103,717,000. The imports of pulp and other paper base stocks were valued at $103,665,000 and of pulp wood at over $15,000,000. All stocks (except bleached sulphite pulp and old rope) as well as news print, showed substantial increases in quantity and value over 1924. Imports of wrapping paper, board, and cigarette paper, however, showed further decreases in both value and quantity.

The total value of imports of paper and paper-making materials in 1925 was about five times as great as in 1913, the increase being in part, however, attributable to higher prices. Imports of standard news print has increased nine-fold in quantity and imports of wood pulp and other paper stock nearly three-fold.

Exports

The total value of exports of paper stocks, paper books, and all other printed matter in 1925 amounted to $51,088,000, an increase of nearly 7 per cent over 1924 and much more than double the value in 1913. Exports of paper cover a wide variety. Increases in quantity and value in 1925 as compared with 1924 took place in exports of pulp, rags, and other stocks, news print, grease-proof, wrapping, and writing papers, and bags, boxes, and cartons. Exports of book paper, paper board, wall board, and photographic paper showed decreases.

Activity of Principal Foreign Countries

The principal pulp and paper producing countries outside of the United States, are Canada, Sweden, Germany, Norway and Finland. Although of these Canada is the heaviest producer, its specialty is news print, most of which enters this country as a non-competitive product, supplying the great demand which can not be met by the domestic mills. Imports of news print from Canada in 1925 constituted approximately 90 per cent of the total news print and over 78 per cent of the total quantity of paper of all kinds entered. Imports of news print from Finland, Germany, and Norway decreased lightly in 1925, while greater quantities were entered from Canada and Sweden. Competition from foreign sources in book paper and other higher grades is so great in foreign markets that our mills have found it difficult during recent years to obtain orders on the basis of price, but have built up on quality an export business that amounts to approximately $2,000,000 a month. When production was resumed in Europe after several years of practical idleness during the war, production costs were considerably lower than the changed conditions and general price levels warranted. The tendency of European costs since that time has been steadily upward, and as this advance continues the possibilities for extending sales of American papers abroad are constantly increased.

George Longhurst Recovering From Burns

George Longhurst, an employee of the Gilbert Paper Company, Menasha, Wis., is recovering from burns suffered when a steam hose twisted out of a barrel, the steam striking the man in the face. He was burned badly on the face and chest.

Paper Team Defeats League Leaders

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, July 27, 1926.—That paper mill companies in this section of the state maintain capable ball clubs was evidenced the past week when the National League top-notchers, the noble Redlegs of Cincinnati, were defeated in an "honest-to-goodness" game at the Gardner-Harvey park in Middletown by that paper concern's hefty team.

The visitors brought their regular team to give an exhibition game and found the paper-makers all prepared. As a pitcher they had a young college twirler who had been given his unconditional release by the Reds. Jack Ryder, nationally-known sport writer of the Cincinnati Enquirer, in his column and a half account of the battle, said Cincinnati ball officials were given "food for thought" by the youth's wonderful exhibition. He stated the Gardner-Harvey team acted like real ball players, entered into the contest with the greatest confidence and carried off the bacon. The paper aggregation had but one bad inning. The score was 5 to 3.

Unfortunately, a few days before the big exhibition game, which by the way attracted thousands of people, the Gardner-Harvey grand stand was burned to the ground, with a loss of several thousand dollars.

Plans have been drawn for a new stand but whether it will be rebuilt in time for the remainder of the season is not known.

Paper manufacturers are said to have found that no outdoor sport sustains such uniform interest as base ball, hence the formation of the Industrial league in the Miami Valley and the playing of a regular schedule. The sport interests every member of the working force and all members of the office staff, including the young ladies, and it is believed that any diversion of such widespread interest, pays for itself in securing improved service both in office and mill as the esprit de corps is excellent and there is sufficient rivalry engendered to keep up harmony.

Notes of the Superintendents' Association

The following have been appointed and accepted as members at large of the executive committee of The American Pulp and Paper Mill Superintendents' Association: H. W. Server, Miami Paper Company, West Carrollton, Ohio. (The Miami Valley Division); Charles C. Champion, Berkshire Hills Paper Company, Adams, Mass. (Connecticut Valley Division; Ward M. Smith, Container Corporation of America, Philadelphia Paper Manufacturing Company Division, Manayunk, Philadelphia, Pa. (Pennsylvania-New Jersey Division.)

A joint meeting of The Western Board Division Henry Burt, chairman and The Michigan Division Geo. H. Pountain, chairman is being planned by these gentlemen with the assistance of the national secretary, E. L. Eminger, to be held probably about the third week in September at Battle Creek, Mich.

Plans are also under way by Wm. Brydges, chairman of Northern New York Division for a meeting of his Division at a date not far distant.

Pospone Paper Simplification Conference

WASHINGTON, D. C., July 19, 1926.—The paper simplification conference which was to have been held by the Public Printer George H. Carter, some time during the summer, has been postponed until the early autumn owing to a trip to Europe which Mr. Carter will take in the near future.

Thunder Bay Co. Installs Taylor Stokers

[FROM OUR REGULAR CORRESPONDENT]

The American Engineering Company of Philadelphia reports that Taylor stokers are being installed under two 1,014 H.P. B. & W. cross-drum boilers in the new power plant of the Thunder Bay Pulp and Paper Company at Port Arthur, Ontario. Preheated air will be used.

To Study Stream Purification In Wisconsin

Paper Mill Men Ready to Take Whatever Action Is Necessary to Remedy Conditions — Fire Interrupts Production for Several Days at the Mill of the Little Rapids Pulp Co. at Little Rapids, Wis.—Paper Mills of Fox River Valley Find Home Market Expanding

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 24, 1926.—Some of the most exhaustive tests ever attempted are being made by Wisconsin officials in cooperation with paper manufacturers to determine whether pollution of the Fox river is responsible for the killing of large quantities of fish each year. Tests now being made are expected to reveal the facts beyond all doubt, and the mill men stand ready to take whatever action is necessary to remedy conditions.

A survey is being conducted jointly by the state board of health and the state conservation commission, with Prof. J. E. Turner, zoologist of Beloit College, Beloit, Wis., Dr. J. A. Worick of the state board of health, Madison, and Ira H. Smith, Green Bay, and John Egan, Manitowoc, are doing the work, using the conservation launch, "Kingfisher." The state has appropriated $10,000 for the work, which will require the remainder of the summer.

Paper Mills Bear Brunt of Blame

Paper mill waste dumped into the Fox river must bear the brunt of the blame until scientific analysis proves otherwise, because tests thus far made indicate that the supply of oxygen begins to disappear from the water as soon as it reaches the paper mill area. Effects are evident after the water flows past Neenah and Menasha, Wis., and it is still worse after leaving Appleton, Wis., and flowing into Green Bay. It is said that very few fish live in water which has left Appleton because the oxygen is almost entirely removed. Dead fish are found in nets in large quantities in this area.

The final test is expected to be that of caging fish and noting what results when they are kept in water in the paper mill area. Numbers of fish of different varieties will be obtained from Green Bay. They will be placed in cages at various points from Lake Winnebago, where the water is in good condition, to Green Bay, where the Fox river empties. A checkup will be made almost daily to determine which ones live the longest.

Definite Report by End of Summer

Prof. Turner and Dr. Worick expect to have a definite report on the cause of pollution by the end of the summer. Results will be tabulated and if it is found that a certain kind of waste, whether it be acid, pulp or sewage is poisoning the river, responsible ones will be instructed to remedy the situation. Paper mill owners are just as interested in saving the fish as the state officials are. They have spent $150,000 already in an effort to solve the pollution and are prepared to go even further. Pollution is the subject of a controversy of years' standing and the investigation will be followed with interest.

Fire Interrupts Production at Little Rapids

Production was interrupted for several days at the mill of the Little Rapids Pulp Company, Little Rapids, Wis., due to a fire there on July 19. A hot box on one of the main drives set a paper machine on fire and help was summoned from Kaukauna and Wrightstown, Wis., when the flames got beyond control of the millmen. The fire was subdued, however, before very extensive damage was done. Work was begun immediately to restore the machine to operation.

Increased Movement of Mills to Canada

Increased movement of paper mills to Canada due to exhaustion of the raw material supply was predicted by R. M. Radsch of Kaukauna, Wis., in address before the Kiwanis Club at Appleton, Wis. Mr. Radsch is superintendent of Thilmany Pulp and Paper Company, of Kaukauna. Mills are more likely to make their headquarters in Canada than to bring the timber to their Wisconsin plants, he said. Mr. Radsch embellished his address with an interesting historical sketch of papermaking and said the Thilmany family was the first to use the present processes for the making of sulphate pulp.

Paper for Chicago Telephone Directory

Chicago's telephone directory means good business for somebody. The Great Western Paper Company, Ladysmith, Wis., has received an order for the paper which will go into this book, one of the largest in this country. It will take about six months to manufacture all the paper required for the directory for the Windy City.

Secure Napkin Patent Rights

Echoes of paper mill progress of interest to manufacturers of the Fox River Valley are contained in the announcement that the New Westminster Paper Mills, of New Westminster, British Columbia, have secured the patent and manufacturing rights of the Hy-G paper napkin and towel system for all British possessions other than Great Britain itself. Quite a number of business men of Appleton, Neenah and Kaukauna, Wis., are interested in this new western mill. The Hy-G system will enable the Canadian mill to turn out 2,000,000 paper napkins or towels, folded packed and sealed in bundles of varying size. Six machines will be installed as soon as shipment can be made. Immediate expansion of the plant also is planned in order to take care of these increased operations.

More Customers for Fox River Valley Mills

Paper mills of the Fox River Valley are finding their market growing increasingly nearer home due to efforts of printing concerns at Appleton, Wis., to build up a magazine publishing business. Publications with monthly circulation of about 200,000 copies now are being printed in Appleton plants. The owners of these establishments have banded themselves together into an association to exert joint efforts to increase this business. The argument they offer is that the logical magazine publishing center is the place where paper is manufactured. Economy in cost can be effected by the saving of freight. Considerable book paper and coated cover stock is already being consumed in these various magazines, much to the satisfaction of mills of the valley.

Plans for Annual Picnics

Preliminary plans are being made by valley mills for their annual employees' picnics usually held on Labor Day. The kimberly-Clark Company of Neenah, Appleton and Kimberly, Wis., and the Combined Locks Paper Company of Appleton, Wis., usually hold outings of extensive proportions including a parade, band concert, baseball games and other amusements. The plan is to repeat the plan this year because of the success of the last few years.

Cellucotton Products Co. Makes Progress

Favorable weather has enabled the Cellucotton Products Company, Neenah, Wis., subsidiary of the Kimberly-Clark Company, to make good progress with its building expansion program. Workmen are nearly through razing old factory buildings to make room for the new five-story plant in which added facilities will be given for the manufacture of sanitary products. Orders which have been received by the company in vast quantities make the new equipment urgently necessary and construction therefore is being rushed so the plant will be ready in the early fall.

Sultry Weather Affects Toronto Paper Trade

Jobbers Remaining in City Not Overburdened With Orders or Shipments—Tissue Paper Section of Canadian Pulp & Paper Association Takes Up Question of Paper Dumping Into Canada—George W. Mead Inspects New Plant at Port Arthur, Ont.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 26, 1926.—In the paper line during the past week there were no surprises in the matter of business. The sultry weather kept orders down to a pretty low notch and those jobbers who remained in the city were not overburdened with shipments or trade. With the advent of cooler days it is hoped that things will pick up a bit, although turnover during this particular season is always limited to immediate needs. A great many members of warehouse and sales staffs are enjoying holidays and printers are not busy. With the approach of August there will be a considerable movement in getting out printed literature for the Canadian National Exhibition, which always attracts a large number of paper consumers to Toronto, and is attended by about 1,500,000 persons during the two weeks that the annual show is in progress.

A meeting of the Tissue Paper Section of the Canadian Pulp and Paper Association was held lately in Montreal to deal with the dumping of paper into Canada. The section passed a resolution to the effect that a representative interview the Minister of Finance and the Minister of Customs, Ottawa, and recommend the appointment of an appraiser having practical knowledge of the various grades of paper. Another resolution passed by the section recommended to the tariff committee of the Canadian Pulp and Paper Association the desirability of formulating a more scientific basis of paper division, having in mind the differences of rates of exchange, transportaton charges, labor conditions, etc.

The pulp market is rather dull at present owing to large quantities of Swedish pulp coming over to the United States by reason of cancellation of several contracts in England. Another contributing cause to the quietness is the usual lull in the consumption of paper at this time of the year. Ground wood pulp is selling at $30 at the mill, bleached sulphite at from $78 to $80, and unbleached at from $60 to $62.

Inspects New Paper Plant

George W. Mead, president of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., and president of the Thunder Bay Paper Company, Port Arthur, paid a visit to the latter city recently. Mr. Mead, who is Mayor of Wisconsin Rapids, inspected the progress of construction of the new paper mill. He was well pleased with the advancement that has been made. Accompanied by Frank Youngman, manager of the Thunder Bay Paper Company, Mr. Mead and party made a tour of the water front and viewed the site of the new mill from the water.

Woman Owns Paper Mill

Fanny Unander Scharvig, of Sweden, who was widowed in 1910, and has since headed the business of her husband, with an annual output of 150,000 tons of paper, which is sold in Sweden and England, was recently in Montreal, Toronto and Winnipeg, on her way to Edmonton, Alta., where she hopes to persuade one of her sons to return home with her. Mrs. Scharvig owns and operates her husband's plant most successfully and was much interested on her visit to Canada.

Sale of Mattagami Assets

October 11 has been set by Charles Garrow, K.C., Master at Osgoode Hall, as the date for the sale of the total assets of the Mattagami Pulp and Paper Company, Ltd., Toronto. Opposition to the fixing of the date was argued by W. R. Smythe, K.C., but the master held that the court order for the sale compelled him to set a date on or before October 11. Strachan Johnson, K.C., appearing for the National Trust Company, proved the claims of the first mortgage bondholders and N. W. Rowell, K. C., on behalf of the Montreal Trust Company, proved the claims of the debenture and stockholders. Mr. Smythe, representing Sherwood Aldriche and McL. Gordon for the trustee in bankruptcy, asked adjournment of the hearing to give those opposed an opportunity to put in evidence on the points upon which they were attacking the securities. The master adjourned the hearing until September 16 to permit the contestants to present their case.

May Enforce Travel Permits

That section of the Forest Fires Prevention Act requiring every traveller in bush areas to carry a travel permit, may soon be put in operation, according to the Hon. G. H. Ferguson, Premier of Ontario, who also has the Department of Lands and Forests under his administration. The Premier is exceptionally desirous of guarding Ontario's forests against the depredations of fire and the Department has been giving serious study to the permit system now in force in Quebec, and it has been found to work out in a satisfactory manner.

In districts such as the section along the highway from North Bay to Cobalt and in the Sault and Mississauga Reserve, he said, the new regulation will be first tried. These areas have much valuable timber and are visited each year by a great number of tourists. No fee will be charged for a permit and those who have hunting, guiding, or fishing permits, will not require travel permits but will be called upon to show their licenses at any time by fire rangers and other authorized government employees. The government will thus be able to keep a check on the number of persons in each bush area, what they are doing and where they are. A fine of from $25 to $300 may be imposed for a breach of the regulation.

Bade Good-Bye to Engineer

J. T. McLellan, construction engineer of the Backus-Brooks Company for the past five years, at Kenora, Ont., was tendered a banquet by the citizens of that town recently on the occasion of his leaving for Antikokan, Rainy River district, to supervise the work of three more developments in that area. As a token of esteem Mr. McLellan was presented with a gold-headed cane, suitably inscribed.

D. McLeod, resident vice-president of the Backus-Brooks Company, was one of the principal speakers, and paid a warm tribute to Mr. McLellan. He outlined the negotiations leading up to the establishment of the pulp and paper mills in Kenora and mentioned the immense difficulties that had to be overcome. The paper mill was now averaging 216 tons daily and would eventually turn out 275 tons. The sulphite plant had a capacity of 85 tons and would be increased to 100 tons daily when the need arose.

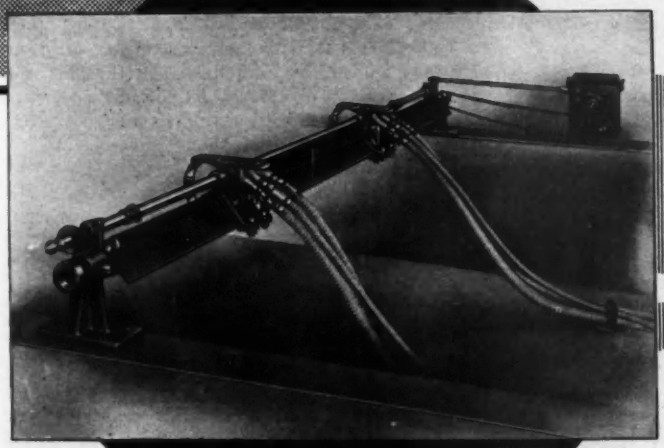
E. W. Backus, who was unable to be present owing to an important business engagement in Minneapolis, sent a wire stating that the work of the company in Kenora had only just begun and that Mr. McLellan would return to Kenora after the work which he now has to embark upon was completed.

Notes and Jottings of the Trade

B. Branch, who for the past seven years has been manager of

(*Continued on page 68*)

It's making more money for scores of mills



The Vickery Felt Conditioner

89

THE number of repeat orders for Vickery Felt Conditioners actually exceeds the number of initial orders.

There is only one interpretation of this fact. The Conditioner must prove to its users that it increases quantity, improves quality, and reduces operating and maintenance expense to such a degree that it makes more money for them.

If you are interested in making more money, let us tell you more about the Vickery Felt Conditioner.

BIRD MACHINE COMPANY **BIRD** SOUTH WALPOLE, MASS.

MACHINERY

Demand for Paper in Philadelphia Slows Down

Vacation Period and Torrid Weather Responsible for More Leisurely Pace of Operations and Activity—Some Fine Paper Dealers Devote Time to Fall Campaigning With Success—Summer Specialties in Good Request—Bag Quotations Advanced.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa. July 26, 1926.—Torrid weather and the absence from the city of heads of firms and employees intent upon seeking cooler resorts, was reflected in the slower pace of the paper markets. While industry generally is marking time during the dog days, and the heat makes impossible more than a leisurely pace of operation and activity, paper dealers are enjoying vacation days at sea shore, mountain and country places, while those left at home are giving their attention to orders that are forthcoming from the consumers of both fine and coarse grades. Fall requirements are anticipated by the local distributors now seeking more freely mill shipments in preparation for stocking on a limited scope. Prices are firm and indicate a healthy papers distribution free of any disturbing influences that might interfere with a more profitable autumn business.

Fall Orders Now Listed for Fine Papers

While the summer days are in their customary doldrums, the dealers alive to the advantage of early canvassing for autumn demands, have been fairly successful in landing orders for fine papers among the prominent printing and publishing houses. These orders are chiefly for book papers, coated grades, and cover specialties usually purchased under contract. A few of the dealers who have foregone a long vacation absence in order to devote their time to advance fall campaigning, have been rewarded with sizeable orders for September deliveries: Other distributors with a lucrative news print following are now featuring the summer supplies of these grades in anticipation of the next six months contracts, and have sent out announcements to this effect urging July purchases in order to take advantage of the present rates with six months deliveries extending to December 31. The credit situation has been dropping into duller days for the collector, and that is the factor that just now is the most disturbing of trade conditions. Dealers report that it is difficult to make normal collections owing to the absence of heads of firms from the city, and to the scarcity of funds.

Coarse Papers Show Improvement

Though the seasonal demand is the most prominent of factors with the coarse paper market in the freer movement of specialties for the hot weather, there has been a lively interest on the part of the consumer in the fall demand of all grades of wrappings and krafts, and those grades used in the manufacturing industries

While but few orders are now forthcoming, the consumer is showing more interest in the paper market by frequent inquiries that are likely to materialize in early demands for the coming operations of the larger manufacturing industries. Krafts and wrappings are holding firmly. There are no accumulations of stocks of any consequence in the hands of the local distributors, so that the market is firmly established on a sound basis.

Bags Advanced

Following a five per cent rise in the quotations of bags in the late June days, another similiar advance in the prices of all bags was made this week, beginning today. Dealers are now quoting the price of all standard sizes and types at ten per cent above the spring markets and are gratified with the healthier tone indicated in the present conditions with absence of price cutting.

A Correction

Now that the mills are looking forward to the coming fall business, having fairly well cleaned up accumulations, dealers are more inclined to place their orders, convinced that prices are likely to become firmer as the months grow. While it was stated in the PAPER TRADE JOURNAL of June 17 that several thousand tons of paper were offered in this market several weeks ago, the amount of actual offerings was exaggerated and it has since been learned that only a few hundred items of paper were offered by the mill referred to at the lower quotations then made. These prices have been entirely withdrawn and the mill is now back to standard valuation of stock. The list of coarse papers which were included in the offerings were overestimated as a forerunner of market conditions for the summer months, and instead of being wholesale dumping of paper on the local territory were merely mill ends that were cleaned out at bargain prices to make room for the newer productions for the fall stocking.

Presents Sword to North Pole Hero

As chairman of the committee appointed to secure subscriptions to the funds for the purpose of purchasing a gold sword for Lieut. Commander Richard E. Byrd, the noted aviator, first to fly over the North Pole, Morton Gibbons-Neff, of the Dill and Collins Company, and president of the Poor Richard Club, was among the notables in the presentation ceremonies which took place in Independence Square during the week. As Master of Ceremonies, President Gibbons-Neff passed the gold inscribed sword to Mayor Kendrick, as the representative of 20,000 subscribers to the fund before the 5000 spectators assembled for the ceremonies, and in turn the sword was presented to the honored hero aviator.

Forest Mills to be Sold

With the advent of August days the Forest Mills, near Newtown Square, will be disposed of by sale. The mills, owned by Elmer Garrett, operating as the Garrett Paper Corporation, were given over to the production of sheathing papers and chip board, and were recently closed. The Forest Mills have been in existence for more than a century and were among the pioneer mills of the state.

Edwin Garrett Operates New Mill

A new paper mill has been placed in operation under the direction of Edwin Garrett, of Chester, Pa., who formerly owned the Granogue Mills at Granogue, Delaware, now owned by Herbert Mason, who recently took over the Curtiss Brothers Mills, at Newark, Del. The new Garrett Mill is at Morgan, Pa., on the Chester Creek, not far from Lamokin, Pa., and will be given over to the production of rope tissues. The mills formerly were flour producers and upon purchase by the present owners were converted in a paper making plant. Mr. Garrett has been identified with the manufacture of rope tissues for many years and is well equipped with a practical knowledge of the manufacture of these grades.

Coarse Paper Dealers Meet

Owing to the sweltering weather which prevailed on Wednesday of last week, the July meeting of the coarse paper dealers was an informal affair devoted to a round table discussion of the present conditions and prospects for the coming fall months. The dealers were unanimous in the comparative estimate of the sum-

—LICENSED—

For several years we have been producing Aldrich Removable Fourdriniers We interchange design with the Inventor

ASK US

The Pusey and Jones Company

Wilmington, Delaware

mer demand and found that the present rating is of a normal trend that might be expected with the let up in activities of the general industrial life of the city and environs. There were eight houses represented at the meeting and luncheon, with Leonard A. Peck, manager of the coarse and fine paper sections of the Paper House of Pennsylvania, as chairman and host of his associates in the Wrapping Paper Division of the Philadelphia Paper Trade Association. All were optimistic over the coming fall paper market. The next meeting of the division will be held in A[illegible]

New Castle Paper Products Co. Operates

The former paper mill of the New Castle Paper Company has been reopened, and is now in operation under the ownership of the New Castle Paper Products Company, producing several specialties. The new plant employs forty men and the present forces will gradually be augmented as the season grows in activity with possibly doubled staff. The New Castle Paper Products Company was located in Newcastle, Pa., after the company had made a survey of 130 cities east of the Mississippi, according to officials of the company, it was learned here last week. The selection of Newcastle was made after the company had made an analysis of the waters of the Neshannock Creek, and the disclosure that they contained almost the exact ingredients needed for economical manufacture of paper products which the new organization will produce. The old mills formerly operated by the New Castle Paper Company were given over to the production of krafts and sulphite colored specialties with a capacity of 16,000 pounds every 24 hours.

Paper Exhibits from Japan

Among the important exhibits featured by the Japan Industrial Association of Tokio, under the direction of the Japanese Government at the Sesqui Centennial Exposition, are those of the various grades of paper manufactured in the Empire. The paper displays occupy a large glass center case and comprise every possible line of products produced by the Japanese manufacturers included in the membership of the Tosa Paper Traders Guild, of Dobokumachi, Kochi; the Matsui Sanjiro group of Mino Paper Traders Guild, Il Matsugayechom Gifu; Teshigawara Naojiro, Komeyacho, Gifu, Gifu-ken SuZiki Toramatsu, 12 Kobayashimachi, Nakaku, Nagoya and Sakata Bunsuke of the Kyoto Export Fan Traders Guild, Karasumarydori, Kyoto.

The line of paper products exhibited by the Japanese trade comprises the complete assortment of tissues, napkins, tissue rolls in colors and white, paper tape and twines in white and colors and ropes for tying fancy and ordinary packages made of tosa, Japanese wall papers, stencil papers, cover papers, announcements and greeting card stocks, in white and colors, the meriatype stencil papers for typewriters, and others. The main displays were from the group of manufacturers known as The Japan Industry Company, Ltd., Osaka, The Mino Paper Trade Association, which assembled the exhibits and arranged with the makers for the various lines shown in the international exhibitions assembled in the Foreign Arts Building, No. 2. A special invitation has been extended to the Philadelphia Paper Trade and other members of the National Paper Trade Associations through the PAPER TRADE JOURNAL by the representatives of the Japanese Government who are now in Philadelphia supervising the exhibits and directing the displays to view the papers and to get in touch with the director in chief, Jiro Hitomi, for any information regarding paper making in Japan and to make the large space and its comfort facilities a stopping point while attending the exposition. In addition to the paper exhibit there are paper products, such as fans, lanterns, parasols, paper mache trays, and other articles made in Japan, featured along with the vast list of importations in the display, occupying an expansive area in the Foreign Arts Building.

Paper House of Pennsylvania Issues Sesqui Edition

In celebration of the 150th anniversary of the Signing of the Declaration of Independence, which is commemmorated in the Sesqui-Centennial Exposition now being held in this city, the Paper House of Pennsylvania has appropriately dedicated its July Bulletin to the part that paper mills in Philadelphia and adjacent territory played in the history of the country at the time of the signing. It gives a history of the old Ivy Mill, known also as the Willcox Mill, on Chester Creek, which at that time was the most important unit of paper making in the United States. It produced, 150 years ago, the paper on which Ben Franklin printed the Colonial Currencies. Its historic watermark, a dove and ivy leaf, were famous in the colonies. It was the same mill that was authorized by the First Continental Congress to make the molds and then the paper on which the first currency of the United States of America was printed. The mills were taxed to extremes to produce the material for the currency needed in the tide of inflation that swept the country during those early and dark days when the victorious British Army was pushing up the Brandywine only a few miles from the city. Special messengers were sent out by Congress to warn the mill owners to destroy the molds in event of the British invasion of the paper plant. Back in 1820 the owner of the Willcox Mills petitioned Congress for a protective tariff on paper, proposing a duty of 25 cents per pound on all writing, printing and copper plate papers and 15 per pound on all other grades, and this was the first step in the protection of the then infant paper making industry of the United States. Later the mill made paper for United States money and for foreign governments. With the invasion of the hand-making process by the advent of Fourdrinier machines, the mills were eliminated as producers of the fine old hand made papers by newer and low priced products. The mills are now falling in ruins and have been abandoned. About five years ago they were devoted to the production of wrappings and kraft papers, but were finally discontinued.

Another interesting article showing the part paper played in the Revolution appearing in this interesting Sesqui-Centennial Edition under the caption "Historic Paper" was the following;—

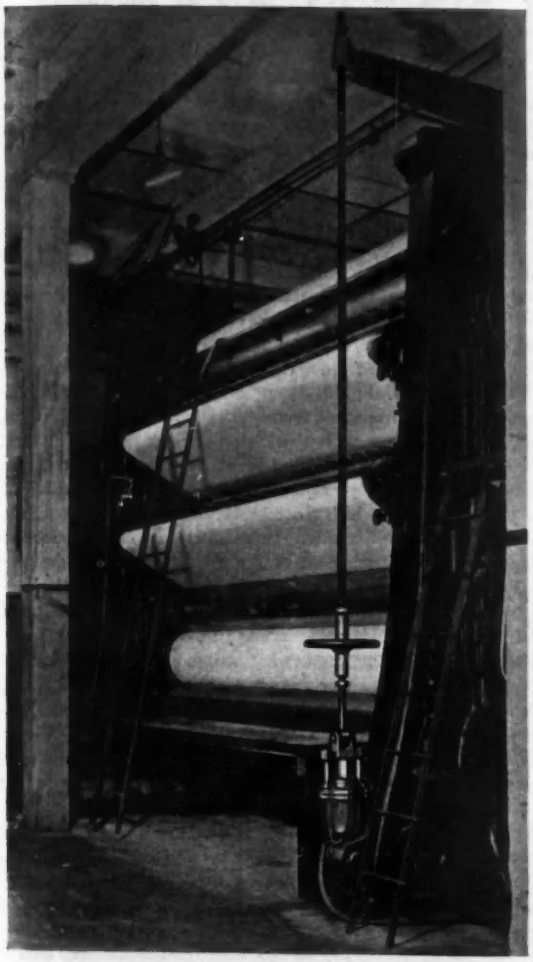
"During the occupation of Philadelphia by the Colonial troops in 1778 Washington's army suffered from a scarcity of paper for cartridge making. The largest quantity suitable for such purpose was found to be paper upon which the Rev. Gilbert Tenant's sermon on Defensive War was printed by Benjamin Franklin during the French and Indian War. This much-needed store of ammunition, about 2500 copies of the address, had been reposing in the garret of Franklin's house. It was quickly contributed by Franklin to the worthy cause. This antipacifist treatise was a good argument in favor of defensive war, and was put to practical means and effective use at the Battle of Monmouth. The printed sheets of an Ephrata edition of Fox's Book of Martyrs and a large part of the 1776 edition of the Saur Bible had previously been used in like manner as hot shot for the British."

Rates on News Print From Espanola Unreasonable

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 14, 1926.—The Interstate Commerce Commission has rendered a decision in the case of the Spanish River Pulp and Paper Mills against the Ahapee & Western Railway Company. In their syllabus in this case the Commissioners say:

"Joint rates on news print paper, in carloads, from Espanola, Ontario, Canada, to destinations in Wisconsin, Minnesota, Illinois, Missouri and Iowa, and to Omaha, Nebr. found in so far as the transportation takes place within the United States, to be unreasonable and unduly prejudicial to the extent that they exceed or may exceed by more than 4 cents per 100 pounds the rates contemporaneously applicable from Sault Ste. Marie, Ont., to the same destinations.



The Valley Super Calender Hydraulic Pressure Device

Instantaneous Pressure *Control* for Your Super Calenders

This is possible if you install the patented *Valley Hydraulic Pressure* Equipment on your Super Calenders.

The super calendering process has always been subject to the following disadvantages: Waste due to low finish paper at the breaks; excessive amount of time and effort to apply pressure. These problems exist on all super calenders regardless of size but the difficulties in obtaining quick and accurate pressure control are multiplied as the width of the stack increases. Thousands of pounds of paper are wasted annually in every mill because of its comparatively low finish.

The Valley Hydraulic Pressure Device permits the pressure to be restored to its proper amount instantaneously by merely opening a control valve and the rolls can be put into full speed operation at once. Not only does this effect a saving in man power, time and hence increase output, but it eliminates the spoilage of a large amount of paper at the beginning of a run or after a change. This appliance will increase the capacity of your super calenders for producing uniform finished paper.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Ave.

Your Copy *of an* Attractive Booklet *is* Ready. Write for it

Future of Wood Supply for Paper Industry*

By Dr. Hugh P. Baker,
Executive Secretary American Paper and Pulp Association

Wood plays such an important part in the manufacture of paper today that it is difficult to appreciate fully what the manufacture of paper meant before wood became an important raw material for the industry. Men are living, and are still active in the industry, who can remember when wood was considered to be more or less of an experimental raw material. The paper industry is unique among the industries of the country in witnessing within a human generation almost a complete change in the character of its raw material. Today of the seven to eight hundred active paper mills in the country, one may almost count upon the fingers of one hand the number of mills which are not using wood more or less as a raw material.

For many years before wood came into general use as a raw material in the industry, it was known that paper could be made from wood. The story of the rather quaint observations which led to the conclusion that wood might be turned into paper and of the struggles in turning wood into a satisfactory pulp from which paper might be made, is well known in the industry. As we are faced daily with the practical question of more economical and effective use of wood and wood pulp, we are much too ready to feel that all of the romance in the development of raw materials from the soil, or underneath it, exists in other industries. The fascinating stories of the finding of gold and other precious metals, and the uses of gold and of iron and of coal, are looked upon as being apart from the equally romantic and fascinating story of the way in which wood has come to be the paper industry's most common raw material. The very fact that our basic raw material has been molded to our hand within a generation should be evidence of the youthfulness and the virileness of the industry, and assurance of as promising developments ahead as there have been in the brief past history of the use of wood in the industry.

Who it there to say that wood, as we fabricate it in the paper industry, may not within another generation be crowding cotton or wool to the wall and relegating many of the present uses of lumber to the background? With all of the practical problems which at times press upon us so heavily, the inspirational value of a look ahead in the industry should not be minimized or forgotten.

In a way statistics as to the consumption of wood in the industry are of but passing interest, indicating only milestones of development. The million cord mark was passed about 1890. Constantly since that time the consumption of wood has increased. In 1924 we produced 4,488,107 cords and imported 1,279,975 cords. A recent report from the Department of Commerce indicates for 1925 an aggregate consumption of pulpwood alone of 5,840,000 cords, an increase of slightly more than 1% over 1924.

In any discussion of the use of pulpwood in the industry and the relation of the wood which we consume to other forms of wood produced from our forests annually, we must recognize curselves, and impress the fact upon those having to do with the general forest problems of the country, that the annual cut of pulpwood in this country is only about 4% of the total annual cut of wood. After all, as compared with other forms of wood, we are not large consumers. However, we must have a regular and a permanent supply of the kinds of woods adapted to our purposes.

What Wood as a Raw Material Has Meant to the Paper Industry

Of all of the factors entering into the production of a commodity, the raw material is, of course, the most important. Even a slight change in the character of raw material may mean a radical change in manufacturing technique and in marketing. We are still actually in the first stages of wood utilization in the paper industry. It is entirely possible to conceive of other and much more important stages of wood use. May it not be within reason to assume that in time wood pulp may in fact become a byproduct with the valuable chemicals inherent in wood as the principal products. In other words, and particularly with hardwoods which are bound to increase in use as time passes, it is quite possible that the valuable oils and salts and sugars of the wood will be the most valuable products of the wood, with returns from these products more than covering the cost of the final reduction of the wood to pulp.

Although the use of wood is somewhat recent in the industry, and although the cellulose from wood is in somewhat different form than that produced from other plants such as cotton, it is an interesting fact that if we go back far enough in the process of refinement wood cellulose is of character quite similar to that of the cellulose produced from cotton and similar fibers. The use of wood in which there has been very great waste, though a decreasing waste, resulted immediately in the production of cheaper grades of paper at lower costs. Without the use of wood there could not have been the development of the modern newspaper or the modern magazine and low priced book. As a result of the first and rather crude use of wood, it has been too commonly believed, and somewhat within the industry itself, that all papers made from wood must of a necessity be of a coarser or cheaper grade than those produced from other fiber. There is no sound basis, from a technical standpoint, for this belief and we are now witnessing constant improvements in the manufacture of wood pulp which may eventuate in paper of equal character with that produced from other fibers.

As indicated, the first result of the use of wood as a raw material in the paper industry was the production of low cost papers making possible the use of these papers in tremendous quantities. There is every reason to believe that the meaning of wood to the paper industry is already in process of a change due both to increasing scarcity of wood and to improved technique. This change must, by force of economic circumstances, result in pulp of a better grade and consequently paper of a better grade. To project the meaning of this change it is rather easy to conceive of the production of pulps from wood which will in an increasing way take the place in industry now occupied by cotton and wool fibre. We have but to think of rayon to appreciate the fact that after all paper may be but one of the varied forms of fabricated wood fiber.

Woods Now Used and New and Unusual Woods

Ease of reduction of wood to pulp has determined largely in the past the kind of wood used in the industry. Doubtless, the prevalence of certain species of wood in the sections where experiments with the use of wood for paper were first carried on had something to do with the methods developed. The first methods used in the reduction of wood to pulp were perfected in Europe where forests are made up largely of one or two coniferous woods. When these wood pulping methods were brought to America, it was felt of necessity that the same type of woods used abroad should be used here.

The development of the first technique in the pulping of woods however was not the only important factor in deciding the species to be used. Generally speaking, the coniferous woods can be reduced to pulp more easily than the so-called hardwoods. Character of fibre had such influence in deciding the woods to be used

* Address before Seventh Annual Meeting of the American Pulp and Paper Mill Superintendents Association, at Detroit, Michigan.

The Tragedy of WASTE

WHEN the railroads saved thirty million dollars in a single year by discarding old type locomotives for the new, we paper men began thinking. And when Herbert Hoover showed us that one-fifth of our payrolls were spent for idle time, we gasped. And we thought, "Well, maybe we do have some waste in the papermaking business."

The tragedy of waste is *preventable* waste. When you have ten men working four hours each on a wire change that, on the NEW BELOIT FOURDRINIER takes five men but an hour or less to accomplish, you have some idea of the *preventable* waste that the "Beloit" can save you.

The Removable, Adjustable and Shakeable Beloit Fourdrinier is a time and labor saver of proved ability. 23 orders and 8 re-orders prove it conclusively.

Get the facts. Write for Bulletin No. 9

The NEW BELOIT FOURDRINIER

FOUNDED 1858 BELOIT IRON WORKS PAPER MACHY BELOIT WIS.

BELOIT IRON WORKS Beloit, Wisconsin, U. S. A.

and after years of development we still feel that the most satisfactory woods for the more commonly used pulps is spruce. Following the use of spruce came the working in of balsam fir and then came hemlock and finally the growing pines of the North and the South, and the softwoods of the Pacific Coast.

For reasons which are obvious, it has been felt for many years that certain of the conifers with low resin content were the woods of greatest value for the manufacture of mechanical pulp. However, economic laws are as much in force in the paper industry as in any other industry or business and there is no reason to believe that obstacles which appear to be in the way of the grinding of the more resinous pines or hardwoods, may not be successfully overcome.

While it is true that virgin forests containing the conifers of accepted value are being exhausted, surveys indicate that complete exhaustion is not nearly as imminent as some would have us think. There are considerable reserves of second growth timber and timber in woodlots upon which the industry will draw heavily in the years just ahead. The American Paper and Pulp Association, through its Woodlands Section is now employing a forester whose first work will be reasonably complete reconnaissance surveys of the different pulpwood producing sections. The first report resulting from this work entitled "Pulpwood in the Lake States" has been given wide circulation and has met with commendation from manufactures and foresters. After the more general studies are completed, the Woodlands Section will send its forester into the field for more thorough studies, particularly of private holdings and for direct assistance along forest management and utilization lines to members of the Association.

With constantly increasing interest in forestry, and with more aggressive work in the renewal of our forests by Governmental agencies and by private owners, it is entirely possible that though we may face a limited period of lean years when certain substitutes for wood may be used somewhat, it is certain that within the next twenty-five years, forest lands not now productive will be supplying pulpwood in large quantities for the paper industry. It is inconceivable that this great aggressive country with its increasing population and resultant competitive conditions will not solve the problem of reforestation in a business like and a successful way.

With the knowledge which we now have of our available stands of timber, and of the rate at which we are consuming this timber, there is reason to believe that our efforts toward reforestation as encouraging as they are will not immediately satisfy our increasing need and that we shall, therefore, probably see more difficult conditions in the way of a timber supply before conditions are better. During this period of lean years which seem inevitable, though the period will not be as long as some would have us believe, new and unused species will be used for the manufacture of paper, possibly in large quantities. The tulip poplar of the middle south is now being very satisfactorily used. Its growth is rapid and it has few really destructive enemies except fire. Wide use of this species is expected. It may be that certain foreign species such as the "Tree of Heaven" or Ailanthus, or the Maidenhair Tree of Japan which, by the way, is a broad leaved deciduous conifer, and others will prove to have value under certain conditions. Further experimentation, however, must be carried on with the growing of these trees before anyone will be able to indicate their possibility of use for the manufacture of paper. Conditions may develop which will justify American mills operating their own pulp mills in the forested regions of Southern Brazil or elsewhere outside this country. Because of the many difficulties of operating in a foreign country, however, this means of securing pulp does not have the promise that seems assured by the use of our own rapid growing hardwoods such as cottonwood, tulip poplar, etc.

Fortifying the Industry with a Wood Supply

Unlike most of our other natural resources, the forest is a renewable resource. We can, therefore, be assured of the possibilities of fortifying the industry with a permanent wood supply. However, the growing of a supply of wood cannot be left to chance. Since the beginning of the wood using industries of this country until very recently we have left the important matter of renewal of our forests to chance.

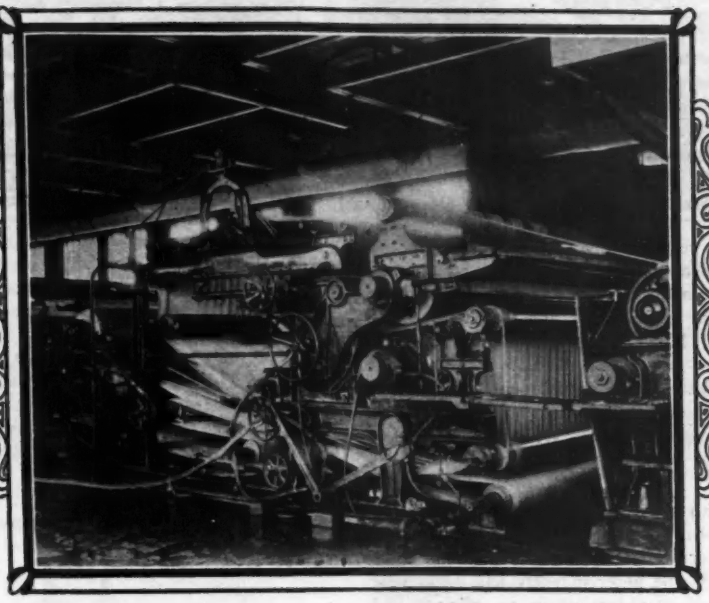
Even though we have the advantage of dealing with a renewable resource, that resource cannot stand the persistent drain of cutting at a rate of nearly four times as fast as the forest is now growing.

Leaving forest renewal to chance has given us the forest fire problems, and the problem of improper forest taxation. It will take much more than chance to solve these two difficult problems and until they are solved we cannot be assured of a renewal of our forests and thereby the permanency of a wood supply for our industry.

Whatever the indifference of the industry to forestry may have been in the past, it is fortunately becoming more clearly evident every year that the sound and businesslike practice of forestry is the only course by which we can assure the permanency of the paper industry in the United States. Wood for all purposes, and particularly for our industry, has been so cheap down thru the years that it hasn't been necessary for the industry to be seriously concerned over the question of fortifying itself with future timber supplies. Every year, or every period of from five to ten years, as cost of wood increases, we have come to give more serious thought to the future of the wood supplying of the paper industry. Fortunately, a number of the larger concerns owning pulpwood lands have for years been carrying on forestry in a simple, though effective way. They have been applying plain common sense to the protection of their lands from fire, and to the production of wood from the forest in such a way as to do the remaining forests the least possible damage, and, in some instances, with the idea of leaving the forest in condition to produce a second and future crops.

Forestry, as already indicated, is the crux of the problem of fortifying the paper industry with a permanent supply of satisfactory wood. It would be out of place in this paper to go into any lengthy description of our present forest conditions or of forest technique which must be used in the renewal of the forests. It is, however, very much in place to emphasize the really vital activities which must be carried on in maintaining and restoring our forests. The effective protection of our forests from fire is today more than 50% of the problem of maintaining forest productivity. Unfortunately, there has developed thru the years a feeling among our people that somehow or another we must have forest fires, and that somehow or another we would continue to get our wood supply, even tho fires should continue to burn. This, of course, is the rankest fallacy. Fortunately it is entirely possible to protect our forest areas from fire almost as effectively as we protect our village and cities from fire. The aim is to make the forest an insurable risk and we have already achieved that goal in part, as fire insurance is being written on growing forests at this time.

The second activity vital to the accomplishment of a condition favorable to the growing of forests, particularly by the private owner, is the changing of our present destructive forest tax laws into constructive measures that will make it financially possible to grow forests. Our practice of taxing the forest annually has in fact resulted in the actual destruction of forests where sound and reasonable tax laws would have protected the forests by allowing of increased growth and by giving the owner the opportunity of cutting the forest if and when there was a reasonable market for it. We are slowly coming, in some of the states, to see the advantage of taxing forest lands as we tax agricultural lands, and that is all that the forester is asking as assistance in the solution of our forestry problem. A



Removing One of the Variables of Paper Quality

A STUDY of the means of making better and more uniform paper has led many progressive superintendents to specify that New Departure ball bearings be used in new equipment—also that old machines be remodelled to substitute ball bearing boxes for the old plain sleeve bearings.

New Departures in this industry have the important characteristics of simple, substantial, neglect-proof construction and are adaptable to water-tight and oil-retaining enclosure.

These close-fitting ball bearing parts make it possible to manufacture thin, high-grade paper and tissues that are absolutely uniform in quality and much superior to similar stocks made on plain bearing machines. Once the rolls are properly set to produce the gauge or weight of stock desired, operators need no longer concern themselves with further adjustments—as would be necessary with plain bearings when they wear and allow rolls to get out of alignment.

New Departure Ball Bearings are a quality and precision product—made of HIGH carbon, HIGH chrome electric furnace alloy steels in the largest and most modern plant of its kind in the world. Engineering application data and consultation service upon request.

The New Departure Manufacturing Company

Chicago Bristol, Connecticut Détroit

396

New Departure Quality Ball Bearings

low land or soil tax similar to that put upon barren or idle lands, with a yield tax at the time the forest is cut, will accomplish more for the practice of forestry in this country than any other single movement.

Forestry is an economic problem with varied financial phases. If a private owner could be assured that he is not to be penalized for improving his forest land by planting or otherwise, he would be the first man to interest himself in the protection of the land from fire and in the bringing back of a new crop of wood. In other words, the growing of trees is, after all, a business proposition, and if a private owner can be assured that investments which he might make in the growing of wood would not be eaten up by a wrong form of taxation, it is reasonable to assume that he would be ready to invest in protection against fire and such other activities as may be necessary in maintaining forest growth. We very commonly put protection of forests from fire as the most vital problem to be solved, and there is no question as to its importance. However, if other conditions are brought about to assure the owner that there is possibility of reasonable profit, he will take such steps as may be necessary for the protection of the forests from fire, just as the farmer invests in the preparation of the soil and in seed, and expects, of course, to protect his crop to the fullest extent from destructive agencies of all kinds.

Those most concerned with the products of the forests must be the first to solve the problem of forestry. In other words, the industry dependent upon a permanent supply of wood must solve its own forestry problem. As the paper industry has, from year to year, met its problems of manufacture in an efficient and businesslike way, it is safe to assume that as conditions and costs justify the growing of wood by the paper industry, it will be grown.

Process of Forestry in the Paper Industry

Forestry like agriculture is an economic problem involving the handling of land in such a way as to produce the most profitable crop from a given soil or a given area of land. The idea of the forest as a crop is not yet thoroughly understood or recognized even by those who are dependent upon crops of wood whether produced in a virgin forest or whether they come from lands that are being handled on the basis of constant renewal. After all a tree is a growing plant which ripens like any other plant and after ripening gradually fails until death takes place. Wherever a virgin forest is cut, we are faced with the use of trees which are over-ripe or over-matured and which are beginning to die naturally or as a result of attack by insects or tree diseases. These facts as to the life of a tree in the forest must be kept in mind as we consider the practice of forestry on lands now covered with forest or lands which we wish to use for the renewal of the forest.

In any statement as to the progress of forestry in this or any other woodusing industry, it might be well to give a brief definition of forestry. This would be a businesslike handling of forest lands so as to secure the most practical continuous productivity of those lands. Whether we can afford to use the more technical methods of forest management depends of course, upon the availability of the lands to be managed and upon the marketability of the products to be secured. Wood has been too cheap down through the years to justify any very expensive methods of forest management and only as the cost of wood increases will it pay to use more intensive methods of forest production. To the man on the street, forestry often means tree planting only and it should be made clear that tree planting is in fact only an incident in forestry. Under present day conditions and in most of our forest regions, tree planting is too expensive to be carried on in any large way. Our natural conditions such as climate, potential value of our forest soils, etc., are so favorable to the growing of trees that in most forest regions effective protection of the forest from fire will bring about a satisfactory natural renewal of the forest.

There are areas very considerable in extent where overcutting and fire have purchased barren lands which demand the actual planting of trees in the bringing back of the forest.

It may be that the industry will find it practical to plant on lands of low value adjacent to mills, particularly where there is either no forest cover as would be the case on abandoned farm lands, or a poor hardwood cover such as now exists on hill lands in southeastern Ohio. Under such conditions it would doubtless pay to develop small nurseries and plant more rapid growing conifers and hardwoods for the production of pulpwood.

Careful consideration of the progress of forestry in the paper industry in other words, a survey of work being done by pulp and paper mills on forest lands, indicates that the industry is making very real progress toward the production of its own wood needs. Some of the work done on these forest lands if of very simple character and might not be called forestry, and yet a beginning in forestry is made whenever a timberland owner starts to protect his forests or forest lands from fire and begins cutting in such a way as to assist the forest in bringing on a second growth of timber.

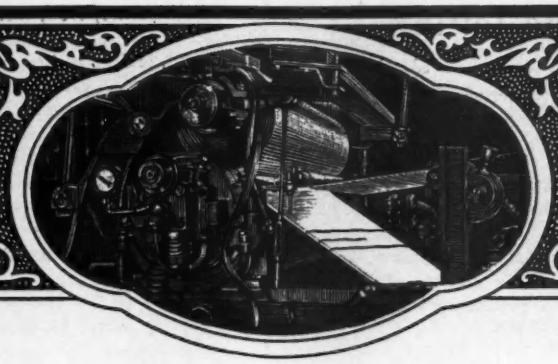
In every one of the forest regions today, pulp and paper companies owning timberlands are doing notable work in the protection of their forests from fire. This is being done individually as groups or in cooperation with State Officials and generally speaking, the work is carried on at low expense, usually not to exceed 5c to 10c per acre per year and often less than these amounts. This protection from fire has made possible the cutting of second and third crops of pulpwood by several companies.

Several large companies have adopted policies of forest development which involve the purchase of forest land or of abandoned farm land and the renewing of the forest cover either naturally or artificially for the purpose of pulpwood production. There can be no question but that these beginnings will be followed by more extensive developments both by the companies which have now made small beginnings and by others and if it is very reasonable to assume that the time is not far distant when groups of companies may form separate corporations for the production of timber for the mills.

The present cost of pulpwood proves conclusively that forestry for the paper industry has become an economic problem which can be met as other economic problems are being met, in a sensible businesslike way and with an assurance of profit. Of course, the unfavorable conditions which have already been described, i.e., fire and wrong form of taxing forests, must be changed, but we are well along the road to satisfactory changes in these conditions and there is large promise in the next five or ten years of real progress in the industry in the direction of the production of its needed supply of pulpwood.

It is only with the past six or eight years that the paper industry has come of itself to the full recognition of the fact that the industry is really a woodusing industry and that the basic raw material must continue to be wood. There are still, of course, some individuals and some concerns in the industry that feel that although they are dependent upon a constant supply of satisfactory woodpulp, that forestry is a remote interest and that the subject is one in which the self-contained mill owning timberlands may well be concerned, but that it is not a matter of vital importance to them. The constant drive of the American Paper and Pulp Association for better understanding of the wood supply problem and of forestry has gradually increased the interest of the industry in the whole question of a permanent wood supply. There has been a feeling on the part of the converting mills that even though the supply of pulpwood is decreasing, that some way or another the supply of pulp would be continuous and that regardless of their personal interest in the matter. The development of interest in a permanent wood supply and in forestry in the industry, which has been due in part to the work of the Association, is really surprising and the

(*Continued on page 42*)



Felts that give you a bigger tonnage at a lower cost

HAMILTON FELTS are so woven that they take a maximum of water from the sheet as it is formed. This means a lower cost of production—to remove a pound of water at the wet end costs but one tenth as much as to sweat it out with steam in the dryers.

Moreover, by taking out more water, Hamilton Felts deliver a better formed sheet and a tougher one to the dryers. There is less down time charged up—your mill enjoys the steady production that means big tonnage, lower production costs, and greater profits.

To really know the superiorities of Hamilton Felts, however, you've got to use them. Try them once and you'll use them always—they really are so much better.

Talk with a Hamilton Felt man about your felt problems. His experience is at your disposal. There is a Hamilton Felt for every need in paper production.

SHULER & BENNINGHOFEN **Hamilton, Ohio**

The Miami Woolen Mills **Founded 1858**

Hamilton Felts

New York Trade Jottings

G. F. Steele, the well known paper broker, of 33 West 42nd street, New York, has just returned to headquarters after a long and comprehensive tour of South America.

* * *

Atterbury Brothers, Inc., wood pulp, rags and paper stock, and French casein specialists, are now installed in their new offices at 110 East 42nd street, New York. Telephone Ashland 3540.

* * *

J. V. N. Dorr, president of the Dorr Company, engineers, of 247 Park Avenue, New York, sailed for Europe recently aboard the White Star liner *Homeric*. He plans to remain abroad for about six weeks.

* * *

The United States Paper Mills, Inc., of Chambersburg, Pa., have opened a New York office at 51 East 42nd street—telephone, Vanderbilt, 5436—in charge of Dunbar A. Rosenthal, president of the corporation.

* * *

New orders booked by the Westinghouse Electric and Manufacturing Company in the quarter ended with June total $44,862,357, against $52,596,434 during the preceding quarter and $44,432,211 for the second quarter of last year. Billings for the second quarter this year were $45,139,956 as compared with $44,861,438 in the March quarter and $38,268,378 in tthe second quarter of 1925.

* * *

The Mathieson Alkali Works, Inc., of 250 Park Avenue, New York, for the quarter ended June 30 last, reports net income of $391,874 after depreciation, depletion, Federal taxes, etc., equivalent after allowing for dividends on 7 per cent preferred stock, to $2.36 a share earned on 147,207 shares of no par common stock. This compares with $384,281, or $2.31 a share, in preceding quarter and $37,750, or $2.35 a share, on 141,257 shares outstanding in second quarter of 1925. Net income for first half of 1926 totaled $776,156, equal to $4.67 a share on common, against $753,403, or $4.64 a share, in first half of 1925.

* * *

The Texas Gulf Sulphur Company, with offices at 41 East 42nd street, New York, reports for the quarter ended June 30 last net earnings of $1,859,918, equal to $2.93 a share on the 635,000 capital shares outstanding. This compares with $1,282,284, or $2.02 a share, in the June quarter of 1925. During the quarter the company increased its reserves, including reserve for depreciation and for unpaid Federal Taxes (accrued), by $497,312, making the total of these reserves $6,903,363 at June 30 last. Net earnings for the first six months of 1926 amounted to $3,790,542, or $5.97 a share, compared with $2,695,377, or $4.24 a share.

* * *

The Franc-Graham Paper Company, Inc., of 25 West 15th street, New York, announce that following recent water damage to their premises, they have renovated their store for the complete transaction of business, and that the Franc-Graham service is again working at 100 per cent efficiency. The water loss was occasioned through a fire in the premises of another tenant in the upper part of their building, and while the fire itself did not reach the Franc-Graham store, their stock was totally ruined by water. There was full coverage by insurance, and the entire stock was turned over to the insurance companies and by them sold at auction, Franc-Graham Company replacing their loss with a complete stock of brand new merchandise from the mills.

* * *

A banking syndicate headed by the Chase Securities Corporation, Bankers Trust Company and Harris, Forbes & Co., of New York, offered an issue of $25,000,000 first mortgage gold bonds 5 per cent series due 1956, of the Gatineau Power Company, a subsidiary of the International Paper Company. This issue, which is dated June 1, 1926, is redeemable at any interest date on thirty days' notice at 105, through June 1, 1936; thereafter at 104, through June 1, 1941; thereafter at 103, through June 1, 1946; thereafter at 102, through June 1, 1951, and thereafter and prior to maturity at 101, plus accrued interest in all cases. The price was 94 and accrued interest to yield over 5.40 per cent. The bonds were issued as part of the company's financial program in connection with its water power development on the Gatineau River, one of the most important power rivers in Quebec. Shortly after the bonds were offered they were reported oversubscribed and the books closed.

New Duty Expected to Benefit Canada

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 28, 1926.—The imposition of the new British duty of 16 2/3 per cent on wrapping papers imported into the United Kingdom is expected to benefit the Canadian kraft manufacturers, according to a report from Consul Jack D. Hickson, Ottawa, who points out that the imperial preference of 33-1/3 per cent should give Canadian paper manufacturers a substantial advantage over their German and Scandinavian competitors. Of the Canadian exports of kraft wrappings during the fiscal year ended March 31, amounting to 21,257 short tons, 6,474 tons went to the United Kingdom, other leading customers being Japan, Australia, and New Zealand.

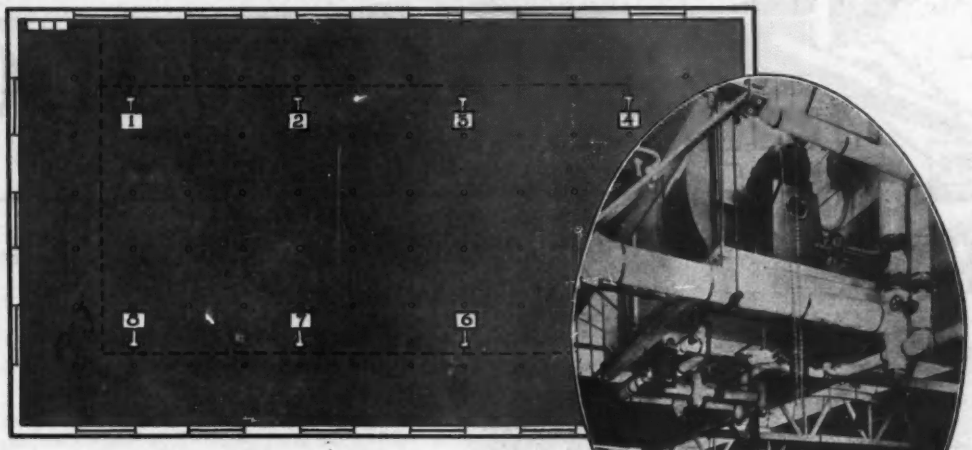
FUTURE OF WOOD SUPPLY

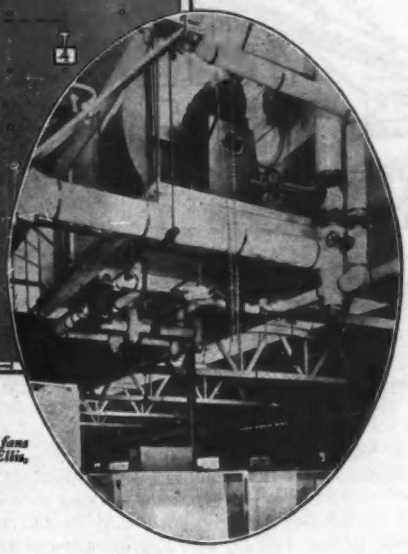
(*Continued from page 40*)

time is not far distant when the industry as a whole, will give general and united support to any constructive work looking to the perpetuation of the industry on a basis of an assured supply of wood produced in this country. In fact, the industry is already taking aggressive leadership among the wood-using industries in the development of forestry. This leadership, with the results derived from the actual practice of forestry, will eventually not only assure the permanence of the industry but assist the industry in solving its financial problems. The banks of the country are coming to ask the question as to the extent to which an individual mill or a group of mills are backed by supplies of raw materials. The time is not far distant when the financial interests of the country will look at the pulp and paper mill as these plants are looked at in Sweden, i.e., through the forest, rather than entirely at the management or at the plant itself.

It may be an accident or otherwise that the paid officers of the American Paper and Pulp Association, are foresters. There can be no question but that the presence of foresters on the staff of the Association has meant much in the work which has been done in furthering the development of forestry by the mills. It is unfortunate in a way that the staff of the Association, because of pressure of other work, has been able to give only limited time to the aggressive furtherance of forestry by the industry. The time may come when there will be greater opportunity for the staff of the Association to give time to forestry as an essential activity in the industry. In the meantime, there can be no question but that a through understanding of wood and of product of wood as a basic raw material has been of great value to those who are employed by the industry to carry forward the work of the Association. The Association has been fortunate in being able to interest enough of its membership to allow of slow development of a Woodlands Section and to permit of the employment of a trained forester in the field, first, for a survey of valuable pulpwood, and eventually for more direct service to mills or groups of mills in the solving of wood problems.

As the superintendent of the mill has well been indicated as the keystone of the mill's organization, so it may be said that the cornerstone of the mill must be a permanent supply of wood produced in this country serving as an impregnable fortification, insuring the permanency of the industry in this great country for all time to come.





One of eight C-H controlled fans in fruit warehouse. W. C. Ellis, Consulting Engineer.

Air wanted?—Push a button

One row of Starters is shown with covers open.

Each of the eight push-button stations gives control of one fan.

This shows the grouping of the eight C-H "X" Automatic Starters and the row of push-button control stations.

C-H "X" Automatic Starters ideal for fan and blower control

IN a large fruit warehouse, a block long—eight motor-driven ventilating fans were installed—and to eliminate the need for an attendant traversing long distances to start and stop these fans, eight C-H "Across the line" Automatic Starters were installed at one central location with all push buttons grouped on the same board.

Besides the convenience of the centralized control, push-button starting and stopping eliminate the human factor and reduce maintenance. Further, Cutler-Hammer "X" Starters are enclosed, are easily installed, and provide motors with thermal overload protection.

Publication C-25 gives all operating and construction details—let us mail you a copy

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MILWAUKEE, WISCONSIN

CUTLER C-H HAMMER

Industrial Efficiency Depends on Electrical Control

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Los Angeles, Cal.—The Southern California Paper Stock Company has completed plans and will soon proceed with the erection of a third floor at its storage and distributing plant, 504 Moline street, estimated to cost about $40,000. A general building contract has been let to Charles B. Harp, Chamber of Commerce Building, Los Angeles.

Seattle, Wash.—The Independent Paper Stock Company, First Avenue South and Walker street, has tentative plans under advisement for the rebuilding of the portion of its mill and warehouse destroyed by fire, July 13, with loss estimated at $35,000, including stock.

Neenah, Wis.—The Bergstrom Paper Company has awarded a general contract to the Fluor Construction Company, 48 Otter street, Oshkosh, Wis., for a proposed five-story and basement addition at the mill, to be used largely for storage and distributing service. It will be 180 x 1660 feet, estimated to cost approximately $100,000, with equipment. Orbison & Orbison, Odd Fellows Building, Appleton, Wis., are engineers.

Winston-Salem, N. C.—The Mengel Company, Louisville, Ky., will remodel a portion of its local wood box-manufacturing plant for the production of fibre containers, installing considerable new equipment for this branch of manufacture. Plans have been prepared.

Pueblo, Colo.—The D. S. Wirt Paper Company, 1604 East Second street, plans the immediate rebuilding of its paper-baling building recently destroyed by fire. An official estimate of loss has not been announced. The structure will be one-story, 50 x 60 feet.

New Orleans, La.—Albert A. Son, 5335 St. Charles street, has been making inquiries for machinery for the manufacture of envelopes in quantity, with information to cover both type of machine and price.

Haverhill, Mass.—The Island Box Company, Bradford district, manufacturer of paper boxes, is considering the early rebuilding of the portion of its plant destroyed by fire, July 20, with loss reported at close to $35,000, including equipment.

Cedar Rapids, Iowa—The Lefebure Ledger Company, 2200 Fifth avenue, manufacturer of paper specialties, has begun the construction of its proposed new one-story and basement plant addition, 120 x 200 feet, estimated to cost approximately $50,000. A general contract for the work was awarded recently to Ora Halfhill, 1500 North Sixth street, west.

Chicago, Ill.—The Burhop Paper Company has acquired property on Elston avenue, improved with one, two and four-story buildings, aggregating 40,000 sq. ft. of floor space, heretofore held by the Horween Leather Company and used for tannery service. The new owner will remodel and improve the different structures for paper storage and distribution. Additional equipment will be installed. The property was secured for a consideration of $103,500. Henry Burhop is head of the purchasing company.

Thamesville, Conn.—The Tidewater Paper Company, which recently resumed operations at the former local mill of the Uncas Paper Company for the manufacture of paper boxes, etc., has filed notice of intention to increase its capital by an amount of $500,000, a portion of the proceeds to be used for general financing and expansion.

Long Island City, N. Y.—Fire, July 11, damaged a portion of the mill of the Ravenswood Paper Mill Company, 545 Van Alst avenue. An official estimate of loss has not been announced. The damage will be replaced.

Chicago, Ill.—The Lanzit Corrugated Box Company has leased space in the industrial terminal buildings at 22nd and Rockwell streets, and will operate a plant at that location.

New Castle, Pa.—The New Castle Paper Products Company, operating at the former local mill of the New Castle Paper Company, has plans under way for extensive production in the line of high grade paper specialties. It is expected to increase the present working force of about 40 employees in the near future.

San Francisco, Cal.—The Traung Label and Lithograph Company, 962 Battery street, is awarding miscellaneous contracts for completion of its proposed two-story and basement paper goods plant on South Pacific street, between Battery and Front streets, estimated to cost $175,000, and will have the structure ready for service at an early date. Couchet & Rosenwald, 60 Sansom street, San Francisco, are architects.

Chicago, Ill.—M. Norian has leased space in the industrial buildings at Twenty-second and Rockwell streets, with lease aggregating $45,391, and will establish a new plant on the premises for the manufacture of paper boxes, containers, etc.

Montreal, Que.—The Gatineau Power Company, recently formed as a subsidiary interest of the International Paper Company, 100 East 42nd street, New York, is disposing of a bond issue of $25,000,000, a portion of the fund to be used in connection with the proposed construction of four hydroelectric generating plants on the Gatineau River, for paper mill and other industrial power service. It is purposed to develop a total production of 397,500 hp., with all plants ready for operation in about 30 months. A. R. Graustein is president of both companies.

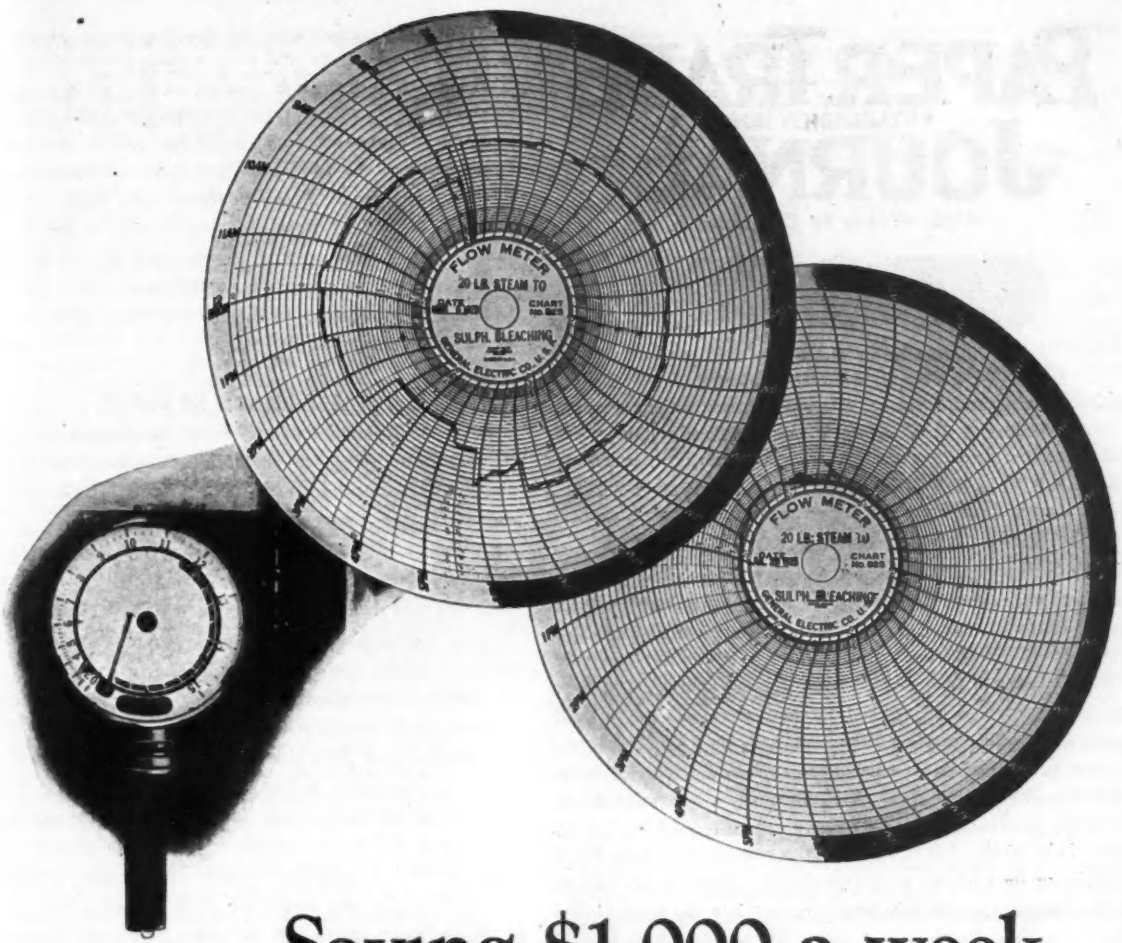
Port Arthur, Ont.—The Provincial Paper Mills, Ltd., Port Arthur, has awarded a general contract to W. J. Tremble, Port Arthur, for the proposed one-story addition to its plant, estimated to cost about $70,000. Work will be pushed to completion.

Beaupre, Que.—The Ste. Anne Paper and Power Company is pushing construction on its new local mill and will place it in service as soon as completed. The machinery is expected to be in place by the close of the year. The plant is said to represent an investment of $1,200,000.

New Companies

Philadelphia, Pa.—The D. H. Davidson Manufacturing Company has been incorporated with a capital of $10,000, to manufacture paper boxes and containers. Thomas M. Carr, 5027 Chester avenue, is treasurer.

Wilmington, Del.—The Lindsay Paper Company, care of Horace Lindsay, Wilmington, representative, has been incorporated with a capital of $50,000, to manufacture paper products. The incorporators are M. D. Hopkins, M. C. Roberts and C. C. Fitzpatrick, all of Wilmington.



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The two G-E Flow Meter charts pictured above tell the story of the 70% reduction in steam consumption in this process that a large eastern paper plant accomplished without affecting the quality of paper.

3 pounds of steam now do the work that formerly required 10!

Put G-E Flow Meters in your steam mains. You may discover, as others have done, opportunities to effect economies in steam consumption that greatly exceed your expectations.

Flow meters make possible uniformity of product and, by pointing out economies in steam consumption, reduce both the coal bill and the boiler capacity required. General Electric, builder of both mechanically and electrically operated flow meters, can recommend the right meter for the job. Consult the G-E specialist in your district.

37-43

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The Magazine of the Paper Industry
HENRY J. BERGER, Editor

Member A. B. C. Audit Bureau of Circulations

Vol. LXXXIII New York, July 29, 1926 No. 5

INTERNATIONAL PAPER CO. IN CANADA

Probably few people realize the full significance of the important works which the International Paper Company has in hand in Canada at the present time. According to statements by ministers of the Quebec Government the company is spending $30,000,000 in construction and equipment of water powers and pulp and paper mills in the Province of Quebec during the present and two following years, while in New Brunswick a further $25,000,000 will be spent in enterprises in which this company, together with the Fraser Companies, and the Bathurst Company are associated. As far as the International Paper Company is concerned the significance of the works that not only is the newsprint manufacturing enterprise of the company to be transferred, apparently, to Canada, but the company is definitely branching out into the public utility field.

A beginning in this direction was made when the company erected a hydro-electric plant at Sherman Island, in the Hudson, which developed some 40,000 h.p. Power was sold to outside interests, and has been a profitable source of revenue. Affiliation with the New England power group was another step in this direction.

It remained, however, for the acquisition last year of the old Riordon-Gatineau properties to present the opportunity of breaking into the field in earnest. Included in this purchase, thousands of square miles of Canadian timber lands were many potentially valuable power sites, among the more important being several on the Gatineau river. It is there that three large developments are under construction. The company, it will be remembered, has announced that it will utilize the hydro-electric plants now in operation at its newsprint mills in the United States for the generation of power for sale to outside consumers. Furthermore, there are a number of undeveloped power sites held by the company in New York and the New England states which will ultimately be developed.

On the Gatineau river the initial power development will be around 400,000 h.p. and already a contract has been entered into for the sale of 260,000 h.p. to the Hydro-Electric Commission of Ontario, at $15 per h.p., giving a gross revenue of $3,900,000 per year from this source alone. The power will be transmitted to Toronto, a distance of 240 miles.

The company will need much of the remaining power for its own purposes in pulp and paper mills, and with the developments on the Gatineau together with the doubling of its news print plant at Three Rivers, Que., will have a daily production of well over 1200 tons of news print in Canada, as well as large quantities of sulphite pulp for sale to rayon manufacturers and others.

In New Brunswick some 50,000 hp. will be developed at the Grand Falls by the St. John River Power Company, a subsidiary of the International Paper Company, and much of this power will also be sold to other concerns, notably to the Fraser Companies, which have contracted to take 20,000 hp. for 60 years. The Company will also use some of the power itself for a mill to have an initial capacity of 250 tons of news print per day, and an ultimate capacity of 500 tons.

STABILITY IN SIGHT

Employment figures compiled by the Bureau of Labor Statistics indicate a check to the decline in manufacturing which was marked in the spring. The figures have led Government economists to the conclusion that a general "leveling off" is taking place in national prosperity and that a long period of comparative stability is in sight.

Employment in manufacturing industries decreased .4 per cent in June compared with May, while payroll totals decreased .1 per cent. These slight decreases indicate a considerable check in the decline in manufacturing reported in May, when the decrease in employment was three times as large as in June.

Employment in June showed also an improvement of 1.3 per cent. over the same month of 1925; payroll totals showed an improvement of 4.1 per cent, and per capita earnings a gain of 2.8 per cent.

The volume of employment increased in June compared with May only in the two groups of West Central States and in the Mountain States, each of the six other geographic divisions registering decreased employment, ranging from 1.7 per cent in the New England States to .2 per cent in the East North Central States. Payroll totals, however, increased slightly in the middle Atlantic States and considerably in the Pacific States in addition to the three divisions noted as showing increased employment.

Employment in manufacturing industries in June, 1926, was 1.3 per cent greater than in the same month of 1925, and employees' earnings were 4.1 per cent greater.

The volume of employment in this twelve month period increased about 4.5 per cent in both the South Atlantic and West South Central States and 3 per cent in the East North Central States. Small increases were made in the middle Atlantic and Pacific States and the West North central division shows no change. The New England division lost 0.7 per cent of its employees, the East South central division 1.4 per cent and the Mountain division 2 per cent.

Seven of the twelve groups of industries show marked improvement over 1925, the iron and steel group coming first with increases of 6.9 per cent in employment and 10.7 per cent in payroll totals.

Industrial and commercial activity of the United States during the calendar year 1925 "reached the highest levels ever attained in our history, not even excepting the years of abnormal war activity," says the Commerce Department Year Book, made public this week.

Preparing for Brotherhood Convention

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., July 26,1926.—The International Brotherhood of Papermakers, with headquarters in this city, is already laying its plans for the 1927 convention which will be the first held by the organization in several years. While the convention will not be held until next March all local unions in the United States and Canada, within the next week or so, will receive a communication from headquarters in this city calling attention of the membership to the coming convention and asking that whatever resolutions are to be introduced by the delegates of the local unions be discussed and prepared well in advance of the convention.

The communication will also ask that each local union make necessary plans so as to be in a position to finance its delegates. In the past many locals were not represented at conventions solely because of their inability to meet the expenses of their delegates. William R. Smith, president of the Brotherhood, is anxious to have every local union represented at the 1927 convention and the communication addressed to locals is a step in that direction.

The international organization has made no decision on the selection of a meeting place for the coming convention. It has been suggested that the gathering be held in this city and Montreal, Canada, has also been mentioned as the convention city. There is a feeling in official circles that the 1927 meeting should be held in some paper making city and there is a possibility that the convention will go to one of these cities if the proper arrangements can be made. The executive board of the Brotherhood will decide the place of meeting at its sessions to be held in this city next January.

The convention next March will be the first held since 1924. This is due to the fact that up to the time of the Buffalo convention that year the Brotherhood constitution provided that conventions should be held biennially on the even year. This was changed, the constitution being altered to provide for the holdings of conventions biennially on the odd numbered years. Ordinarily, a convention would have taken place during the spring of 1925 but it was decided by the organization to omit the annual meeting that year. Because of the fact that the convention next March will be the first held in three years a large amount of important business will be transacted and it is expected that the gathering will be one of the most important held by the organization in years.

Chicago Paper Co. Visits Kalamazoo

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 24, 1926.—Officials of the Chicago Paper Company, salesmen and representatives of that company, were in Kalamazoo Wednesday and Thursday of this week, attending a sales conference and golf tournament staged under the direction of officials of the Allied Paper Mills. Plenty of time was alloted for play, there being 18 hole golf matches both Wednesday afternoon and Thursday morning over the links of the Kalamazoo Country Club. Handicap medal play prevailed, with a dozen handsome trophies hung up for competitors.

Wednesday morning the whole party inspected the King Division of the Allied Paper Mills. Luncheons were held both Wednesday and Thursday noon at the Kalamazoo Country Club, with a banquet at 7:00 Wednesday evening at the same place.

Following the dinner there were speeches by A. G. Gilman, president of the Allied Paper Mills; W. N. Gillette, vice president of the Chicago Paper Company; I. J. Magill, sales manager of the Chicago Paper Company; A. R. McDonald, publisher of the System Magazine, Chicago, and O. M. Corrigan, chief chemist of the Allied Paper Mills.

The list of guests from out of the city includes:

Chicago: William Nuess, Ray Bawden, J. E. Abel, C. H. Rasmussen, E. Muscheat, H. Ingersoll, Edward Bishop, James Northcopp, Charles Nixon, A. E. Wheeland, Joseph Rowley, Harry Fick, I. J. Magill, W. N. Gillette, J. W. Knox, E. R. McKibben, A. J. Bauman, L. Clough, William Sleeppeck, A. C. McFarland, William Niehaus, A. R. McDonald, H. W. Powell.

Milwaukee: J. M. Allman, Hans Christiansen, F. J. Miller.

Detroit: F. J. Keogh, E. C. Pecrequin.

Cleveland: Berne Jobb, Oliver Gibbs.

Grand Rapids: Charles Wright, Morgan Levi, Jack Dyer, R. E. Gray.

Toledo: Ernest Paff, John A. Church.

Cincinnati: E. W. Church.

Indianapolis: R. W. Fleicher.

Representatives of the Allied Paper Mills present at the dinner session were: A. G. Gilman, G. H. Gerpheide, George S. Davis, F. B. Jessup, James B. Grinling, George H. Pountain, M. Mulder, M. C. Mulder, William Carroll, J. T. Glezen, E. Crutchfield, Arthur Randall, A. H. Parker, O. W. Corrigan, John A. Pyl and S. B. Monroe.

Griswold Paper Co. in Receivership

NORWICH, Conn., July 26, 1926.—P. Leroy Harwood of New London, has been appointed temporary receiver of the F. T. Griswold Paper Co., of Montville, his appointment coming from Judge Allyn L. Brown of the superior court on application from Mary B. Goodnow and David F. Goodnow. Mr. Harwood filed a bond of $5,000 as receiver.

A hearing upon the confirmation of the appointment and for the appointment of two appraisers is to be held before Judge Christopher L. Avery in the superior court room in New London on August 5 at 9 o'clock.

The F. T. Griswold Paper Company is a corporation organized under the laws of this state and has a capital stock of $100,000 divided into 500 shares of common stock at $10 par value and 50 shares of preferred stock at $100 par value. Mary B. and David F. Goodnow are owners of more than 2,300 of the company's shares.

The two applicants have brought an action to the superior court of New London county for the first Tuesday of September, 1926, for the dissolution of said corporation and the appointment of a receiver to wind up its affairs.

Weston W. Goodnow, president of the paper company, waived notice of the hearing on the immediate appointment of a temporary receiver and requested the appointment of a temporary receiver.

There was no opposition to the application.

About 40 hands are employed at the concern.

Cost and Technical Men Meet

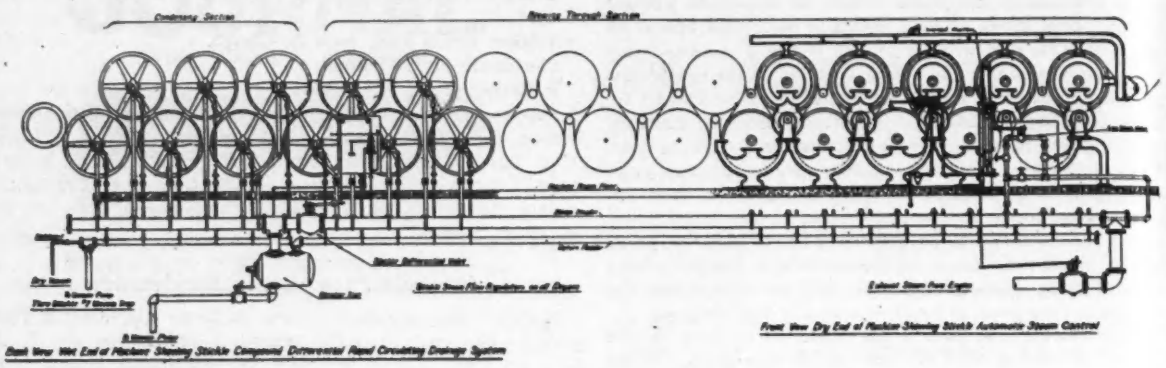
KALAMAZOO, Mich., July 28, 1926.—The July meeting of the Cost and Technical Association of the Paper Industry, Kalamazoo local branch, was held Wednesday evening at the Paw Paw Lake Country Club, Watervleit. Guests arrived at the lake in the afternoon, taking part in golf, swimming and bowling, also for a visit to the plant of the Watervleit Paper Company.

Dinner was served at 6:30. The program included three talks: "Use of the Ditto Machine in the Office," V. F. Quigley; "Shrinkage, or Discussion of Standard Costs," by George K. Ferguson of the Watervleit Paper Company; "Some Experiences with Water," H. S. Faram, formerly with Neariness and Hoskins, consulting chemists of Chicago.

Lewis F. Haupt in Buffalo Hospital

BUFFALO, N. Y., July 19, 1926.—Lewis F. Haupt is in the Millard Fillmore Hospital here as the result of an auto accident over six weeks ago. The shock of the accident superinduced a major surgical operation and under the most favorable conditions Mr. Haupt will be here a further six or eight weeks; after which time he will go to his old home on the farm at Barker, Niagara County, N. Y., to recuperate.

STICKLE'S SYSTEM OF DRYING PAPER



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Front View Dry End of Machine Showing Stickle Automatic Steam Control

The Stickle Automatic Steam Control and Differential Rapid Circulating Drainage System will automatically maintain an evenly dried sheet at the lowest possible pressure at which a sheet of paper can be dried. The sheet will be held close to a one-half of one per cent moisture change.

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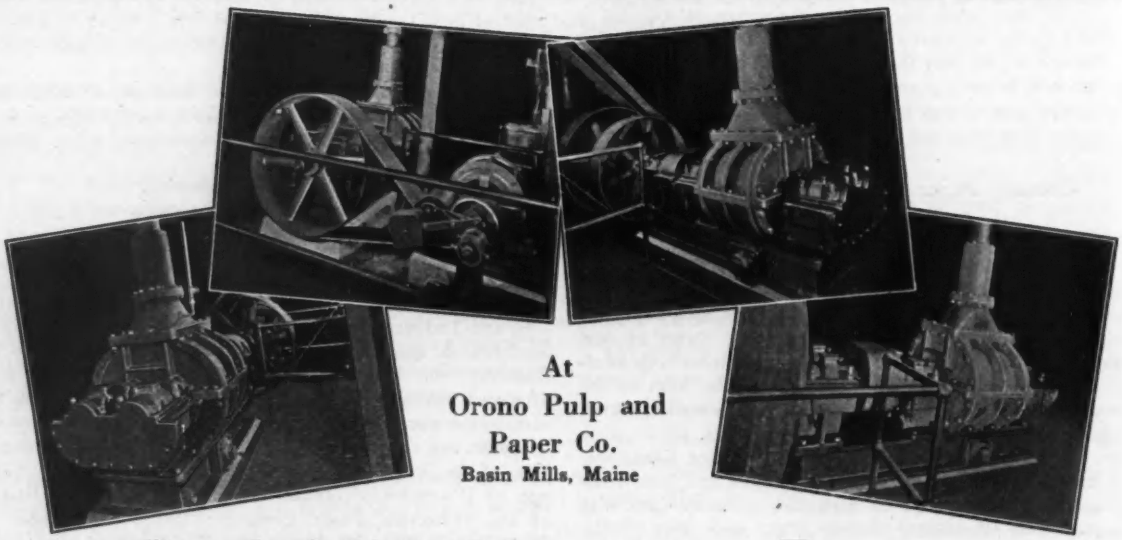

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AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G.MacNAUGHTON, Secretary

Economics of the Chlorine Industry*

In electrolytic process, chlorine is principal product, caustic soda and hydrogen being byproducts

By D. A. Pritchard, Works Manager, Canadian Salt Co., Ltd.

The modern chlorine industry, like other chemical enterprises, is greatly indebted to the science of the late eighteenth and early nineteenth centuries. In 1774, Scheele prepared gaseous chlorine by the action of hydrochloric acid and manganese dioxide. Northmore prepared the first liquid chlorine in 1805. In 1807 Sir Humphrey Davey produced sodium and potassium by the decomposition of fused salts with an electric current, and in 1810 demonstrated that chlorine is an element, discarding the old name of the gas, "oxygenated or phlogistonated muriatic acid," gave the name "chlorine" and sealed the doom of the phlogiston theories. In 1833, Michael Farady discovered and set forth the laws for the action of electric current on salt solutions.

The history of the economics of chlorine begins in 1785, when Berthollet prepared a bleaching agent by dissolving gaseous non-electrolytic chlorine in water. In 1789 he improved this process by adding the chlorine to caustic potash solution at a French chemical plant on the Quai de Javelle, Paris, and this new bleaching agent became known as "Eua de Javelle." James Watt, the chemist and inventor of the steam engine, obtained the process of manufacture of "Eau de Javelle" from Berthollet and handed it on to Charles Tennant, the founder of the great English chemical company. After long study, Tennant brought out in 1798 a bleaching solution made by chlorinating milk and lime, and in 1799 improved upon this substance by chlorinating hydrate of lime. Thus the bleaching powder industry was born.

The bleaching powder business grew from 1799 on, but the manufacture of gaseous chlorine by the Berthollet method of heating salt, manganese and sulphuric acid in lead stills continued to be the method of chlorine production, until 1836, when Gossage invented his coke towers for the condensation of the waste hydrochloric acid gas evolved in the LeBlanc soda process. Once that was accomplished, Scheele's invention of 1774, the evolution of chlorine from the reaction of hydrochloric acid on manganese diozide, became largely the commercial method of producing gaseous chlroine.

However, in 1845, Dunlop invented a process of preparing chlorine by decomposing salt and potassium nitrate with sulphuric acid. The process gave hydrochloric acid and nitrous oxides as byproducts. The chlorine was freed from hydrochloric by washing with water, and the nitrous oxides were absorbed by sulphuric acid and used in the production of sulphuric acid. This process was only commercially possible when tied in with sulphuric acid manufacture, and, aside from Tennant's, does not appear to have been used elsewhere on any considerable scale.

In 1855 Dunlop invented a process for Tennant whereby he recovered and regenerated the waste manganese liquors of the Scheele method, and in 1866 and later, Weldon improved substantially on the Dunlop process. In 1868, Deacon and Hurter obtained British patent No. 1,403, covering the well-known Deacon process of producing chlorine by decomposing hydrochloric acid with oxygen in the presence of an oxygen carrier. The Deacon process became the outstanding one, though many attempts were made by inventors to improve upon it, and also to obtain chlorine from the byproduct calcium chloride of the Solvay soda process. The gradual rise of the Solvay soda process and the decline of the Le Blanc soda process, and the advent of electrolytic chlorine make the Deacon process now a matter of history.

In 1851, Charles Watt obtained British patent No. 13,755, covering an electrolytic production of chlorine, caustic soda, sodium hypochlorite, etc. This patent is of great historical interest, and was followed by those of other inventors, and much research was done in Germany and England. In 1884 the Elektron Co., Griesheim, began investigations of electrolytic chlorine production, and in 1890 this company started the first successful commercial manufacture in the world. From 1890 onward numerous cell installations of many types were started. Some worked, and others did not, but the progress was steady. In North America at least 14 types of cells are in use at present.

While these gradual changes in the methods of producing gaseous chlorine were going on, the uses of bleaching powder steadily increased in the bleaching of textiles and paper pulps, in crude methods of disinfection, and after 1856 the industry obtained a new consumer in the coal-tar dyestuff industry in England and Europe. England built up a world-wide market in bleaching powder. Germany also had a large domestic and some foreign business. Liquid chlorine, however, brought about in Germany and in the United States, and later in England, a rapid growth in electrolytic plants without a corresponding growth in uses. This condition obtains now in Germany, Italy, England and the United States.

The chlorine industry here and abroad is primarily concerned in making chlorine and finding uses for it. The industry cannot make caustic soda, and waste chlorine and hydrogen. The amount of misinformation about the economic status of chlorine

* Paper presented at the Forty-Ninth General Meeting of the American Electrochemical Society held in Chicago, April 22, 23 and 24, 1926.

is considerable, and presumably well-informed chemists and engineers have hazy ideas on the subject. Works of reference, especially English ones, contain little about liquid chlorine and much about bleaching powder. Two recent and on the whole excellent treatises on chlorine cells made no mention of the cell used in one of the largest cell installations in the world.

It is not unusual to hear that chlorine is incident to the manufacture of soda caustic potash. A recent trade paper in an article on chlorine said in part: "At present the output from the manufacture of caustic soda and caustic potash far exceeds the current demand. About 30 per cent of the output is lost or disposed of in some way so as not to be a nuisance to the surrounding country. . . . The consumption of chlorine is increasing now, but apparently no faster than that of its twin product, caustic soda." The answer to all such statements as this is that electrolytic caustic soda and caustic potash, so far as the chlorine industry is concerned, are incident to the manufacture of chlorine. Electrolytic caustic soda is a small part of the caustic soda made and consumed, and the use of caustic potash tends to decline, because the cheaper caustic soda replaces it in many operations.

Local Production of Chlorine Impracticable

It is often said that cell operation is a simple thing, and that chlorine consumer can easily and cheaply produce their needs on the spot. If this were true the chlorine industry here and abroad would have largely disappeared years ago. It must be obvious that most users of both chlorine and caustic soda need far more soda than chlorine, and that to make enough soda they are bound to produce within two or three per cent of the same amount of gaseous chlorine. What will they do with this chlorine? It cannot be put into the air or the sewer with impunity, and it cannot be sold in gaseous form. So three methods of disposal are at their command—(1) make bleaching powder for a dwindling margin; (2) liquefy it and become part of an overdone industry; (3) engage in the highly competitive, and in the present state of our knowledge, somewhat restricted manufacture of organic and inorganic compounds of chlorine. All three ways out of this dilemina are economically unsound, and are a hopeless task for a chlorine consumer, who incident to his operations, requires some caustic soda and much less chlorine. In the chlorine industry proper the capital investment is two dollars for each one dollar of sales annually. This capital investment, although no higher than that of some other parts of the chemical industry, is about double that of the average of all manufacturing enterprises.

Again, let us suppose that a user of both chlorine and caustic soda elects to make chlorine to the extent of his needs, and to supplement his electrolytic soda with purchased soda. It is immaterial whether he buys this soda fused in drums or in liquid form, he must so arrange matters that his weak cell liquors are mixed with the purchased soda to give him the strength or strengths of soda solution necessary for his operations. This is not as simple as it sounds, and again he is embarked on a chemical enterprise requiring constant and expert attention, especially if sodium chloride is present in his own cell liquors, and as is generally the case, is detrimental to his technical use of the soda.

Again it is often urged that small users of sodium hypochlorite solutions can best make such solutions at the cell itself. There are a number of small operations of this kind, and they perform fairly well if given expert attention. It is often claimed that such sodium hypochlorite solutions are more stable, and give "quicker bleaching effects" than solutions made up from bleaching powder or liquid chlorine, together with soda ash and caustic soda. The fact is that an absolutely stable sodium hypochlorite solution is yet to be had by any known method of manufacture. Once that is attained it will be possible to measure this "quick bleaching effect" of various hypochlorites.

Over and above all of the foregoing considerations still remain two important features, the disposal of the hydrogen, and the technic of cell operation. The hydrogen matter will be touched upon later.

As to cell operation, it must be evident from the foregoing historical sketch that the comparatively successful cell operations of various types of today are the flower of many years of work and the expenditure of much money. The cells are still a delicate mechanism requiring expert chemical and mechanical supervision. It is a 24-hr. day operation in three 8-hour shifts, seven days a week. Each shift requires skilled foremen and chemical control. You cannot turn production on and off as you do a water tap. You are dealing simultaneously with three substances requiring most careful handling—a noxious gas, a flamable gas, and a powerful alkali.

A central plant serving a large number of customers is in a good position to obtain steady distribution of its diverse products, and so keep its production constant with consequent economy of operation.

Until recently hydrogen has been largely wasted by chlorine makers in the United States of America, and to a lesser extent abroad. The current and proposed uses are for the manufacture of hydrochloric acid, ammonia, alcohols, and the hydrogenation of oils. A little has been used at time for balloons, but lighter-than-air flying machines cut little figure in military aeronautics, and in the United State helium has displaced hydrogen. Small quantities of hydrogen are also burned for heating purposes in some chlorine plants.

As to hydrochloric acid, the manufacture by combining hydrogen with the chlorine gas has been practiced on a commercial scale for some years, both here and abroad. The first American production was by Roberts Chemical Co., Niagara Falls, N. Y., in 1902. It is admittedly a somewhat hazaradous enterprise on account of explosion risks. The acid is of high purity, providing suitable absorption apparatus is used. There is also considerable acid made by a process requiring the passage of chlorine and steam through coke, which is first brought to glowing heat and afterwards kept hot by the temperature of the reaction. The real difficulty in the United States and Canada is to dispose of the acid in competition with sulphuric acid. Hydrochloric acid will readily replace sulphuric acid at a price in numerous operations, including the bleaching of cotton textiles and the pickling of steel plates, and is used abroad in large quantities for such purposes. Abroad, in the pickling of steel plates, ferrous chloride is obtained as a byproduct, and this is in turn converted to ferric chloride and furnishes a cheap source for the last-named material.

Synthetic Ammonia As An Outlet for Hydrogen

Chlorine cell hydrogen, which is very pure, fits admirably into the manufacture of synthetic anhydrous ammonia, and nearly all of the hydrogen not used for other purposes and now available from this source at Niagara Falls is tied in to synthetic ammonia operations. There is a least one chlorine outside of Niagara Falls using his hydrogen for synthetic anhydrous ammonia manufacture, and several others are building or contemplating building small ammonia installations. It is not to be inferred, however, that synthetic anhydrous ammonia manufacture will bring about an increase in chlorine production in order to obtain pure hydrogen, but to the extent that chlorine cell hydrogen is nearby to synthetic ammonia operations, it offers some cheap and pure supply of the key to the production of both synthetic ammonia and synthetic alcohols.

Attention should be called to the fact that the total production of anhydrous ammonia, synthetic and nonsynthetic, in the United States has already outstripped the consumption. Unless new uses or conversion to ammonium sulphate or other fertilizer or oxidation to nitric acid for the increasing use of nitric acid in nitrocellulose for rayon and lacquers can be had, the further expansion of synthetic ammonia in the United States at least, is a problem of matching costs with non-synthetic ammonia. We cannot, however, engage in this paper in speculations on the cost of

production of nonsynthetic ammonia, or foresee the future. It is worthy of note that synthetic ammonia, as matters stand now, is a purer product than its rival, and has already found interesting technical application and tends so far to create a field of its own. In passing to the next use of chlorine cell hydrogen, it should be noted that isolated chlorine cell operations outside of the chlorine industry, wasting their hydrogen, are at a further disadvantage in chlorine costs of about $4.50 per ton of chlorine, by reason of this wastage.

Chlorine cell hydrogen for synthetic alcohol manufacture has been proposed, but nothing appears to have been done here or abroad so far. The same economic considerations as in the case of synthetic ammonia are in order, that is, it does not appear to be possible in the present state of our knowledge to build a synthetic alcohol operation on chlorine cell hydrogen, without first having a sure and profitable outlet for the chlorine.

Chlorine cell hydrogen for the hydrogenation of oils is really a simple matter, and revolves itself into a transportation question. It takes very little hydrogen and much oil to get a hard fat. You cannot transport the hydrogen any great distance, so the oil must be brought to the chlorine cell hydrogen if that is the hydrogen to be used. As chlorine cell hydrogen in the United States is remote from the oil supply, the matter is largely academic. One American chlorine maker hydrogenates oils and carries every operation from growing the oil nuts to disposing of the nut residues as cattle feed.

Bleaching Powder Has Traditional Background

As before stated, bleaching powder was made in England from 1799 onward. The lime, then and now mainly a carrier for the chlorine, took on an added importance in this compound in the eyes of bleachers of textiles, and a great tradition was built up that the lime played a necessary part in textile bleaching operations. This tradition, born of the use of lime boiling and other lime treatments of textiles long prior to the use of chlorine as a bleaching agent, persists to this day, epsecially in England. The use of bleaching powder in textile processes in Germany and the United States is obsolete except for small scale operations. As the Le Blanc soda process was never operated in the United States or in Canada, neither country had any chlorine by the Deacon method, and there is no record of American or Canadian commercial production of chlorine by the method prior to Deacon mentioned above. The United States and Canada therefore imported bleaching powder largely from England, and not in quantities until after the Civil War, as the consuming industries were few and took little.

The first Canadian manufacture of bleaching powder was by Canadian Salt Co., Ltd., Windsor, Ont., in 1912. The first manufacture of bleaching powder for sale in the United States was at Rumford Falls, Me., in February, 1893. This was the first American electrolytic chlorine plant and used the LeSueur cell. At Midland, Mich., at what is now The Dow Chemical Co., small quantities of bleaching powder were made as early as 1895, and on Thanksgiving Day, 1897, The Dow Chemical Co., started a larger plant, using 400 kw. In 1898 the Rumford Falls LeSueur cell plant, then known as Electrochemical Co., was transferred to the works of the Burgess Sulphite Fibre Co., at Berlin, N. H., and in the same year the Castner Electrolytic Alkali Co., began making bleaching powder at Niagara Falls. The Pennsylvania Salt Manufacturing Co., at Wyandotte, Mich., started in 1903, followed by Hooker Electrochemical Co., in 1906. From thence on, other manufacturers added to the bleach output, and in 1916, the high-water mark for bleaching powder was reached when the American production for sale exceeded 133,000 short tons.

Liquid Chlorine Steadily Replacing Powder

The imports into the United States were at their highest in 1891, two years before LeSueur started, and amounted to 55,578 tons. In 1913 they had dropped to 38,000 tons and in 1924 were 5,400 tons. In 1924 the American and Canadian production for sale was about 83,000 tons. No reliable figures for American or Canadian export are available, but obviously the production is declining as liquid chlorine gradually replaces bleaching powder. It is interesting to note that the declared value for customs entry purposes in the United States of imports in 1871 averaged $39.60 per short ton. The American price now is $40 per short ton with the dollar at a purchasing power as compared with the dollar of 1871 of about $0.50. In other words, the selling price of bleaching powder is about one-half of what it was in 1871.

Bleaching powder will undoubtedly continue to be made in the United States and Canada on a modest scale for years to come, until the traditional uses die out, and all chlorine users become expert in the application of liquid chlorine. In small quantities bleaching powder now competes with liquid chlorine on a strictly cost basis, because of the expensive packaging of liquid chlorine. Technically considered, bleaching powder offers no advantages over liquid chlorine, as the absence of lime residues, the ease and mobility of handling, and the fact that lime is not always required in the technical application, are all in favor of liquid chlorine. Furthermore, liquid chlorine properly packaged and stored in a cool place will last indefinitely whereas both bleach and its packages deteriorate.

Liquid chlorine was first commercially produced in 1888 by the Badische Co., and it will be noted that this was two years prior to the commercial operation of the first electrolytic chlorine plant in the world at Griesheim. From 1888 onward the manufacture of liquid chlorine has been highly developed in Germany. The English stuck to bleaching powder, and had no considerable liquid chlorine until after the World War had started. The first Canadian liquid chlorine was manufactured by the Canadian Salt Co., Ltd., Windsor, Ont., in 1922.

In the United States the first commercial delivery of liquefied chlorine in cylinders was made in 1909. In that year the Goldschmidt Detinning Co., of Wyandotte, Mich., shipped the first American 15-ton single tank carload of liquid chlorine to their plant at Carteret, N. J. The liquid chlorine business grew slowly but steadily, largely due to the pioneer work of E. D. Kingsley, of the Electro Bleaching Gas Co., in the bleaching of cotton textiles and the treatment of portable water supplies. The estimated yearly capacity of all commercial plants in the United States and Canada in 1925 was approximately 185,000 tons of chlorine gas, and of this capacity approximately 46,000 tons were liquefied. What proportion of the total gas capacity and total liquefying capacity was operated in 1925 is not known, but it is certain that a large proportion of both was not operated. These figures do not include Edgewood Arsenal, Md., the U. S. Army plant, with a chlorine gas capacity of 36,500 tons. This plant does not operate and is held in standby condition.

The packaging and transportation of liquid chlorine has been brought up to a high standard. It is transported steadily and with almost complete absence of accident in single unit 15-ton steel tank cars, in multi-unit steel cars, carrying 15 one-ton tanks, and in steel cylinders of 10, 20, 100, 150 and 2,000 lb. (4.5, 9.1, 45, 68 and 907 kg.) capacity. There are over 300 steel tank cars and 80,000 steel cylinders in use or available. The United States shipping regulations are embraced in "I. C. C. Regulations for the Transportation of Explosives and Other Dangerous Articles by Fraight and Express and as Baggage, Including Specifications for Shipping Containers, Bureau of Explosives, Phamphlet No. 9, Effective Jan. 1, 1923. Par. A, 551, 559, 562C, 576, 581 (6), 582, 583, 917." The Canadian regulations are modeled exactly on the aforementioned regulations. This packaging requires a large capital outlay, and the shippers keep elaborate and costly records of every container, and maintain a rigorous inspection of every container prior to filling. These items add measurably to the cost of producing liquid chlorine. The makers are also obliged to maintain an expert service as technical assistance to consumers.

Paper Industry Largest User of Chlorine

It is estimated that about 65 per cent of all the chlorine gas manufactured in the United States and Canada is consumed by the paper industry; that 22 per cent is used in the textile industries; 10 per cent in sanitation and the remaining 3 per cent in all other uses.

Liquid chlorine is transported to over 6,000 cities and towns in North America for the chlorination of drinking water, sewage, bathing beaches, swimming pools, garbage odors, and for other sanitary purposes. The application of chlorine to such uses has been evolved from the pioneer stages to a high standard, by much hard work and research. American and Canadian chlorine sanitation is the model for the civilized world. However, much remains to be done in the sanitary field, especially in sewage, which becomes an increasingly difficult matter with the growth of cities, the mobility of the population brought about by the motor car, the progressive deforestation of the American continent, the increase in industrial wastes, and the enoromous per capita consumption of water. Chlorine is not a "curall" for the sewage problem, but that it has a place in treatments of various kinds, is increasingly event. Gaseous chlorine for the treatment of colds and diseases of the respiratory tract has recently been used in thousands of cases with good results as a whole and much research is under way.

Chlorine-Resistant Materials Needed

These "all other uses" are largely within the field of organic synthesis, or the treatment of organic substances. First as to organic synthesis. It is well known that there are numerous processes involving chlorine in some form, and that they are practiced as in the cases of paradichlorbenzene, trichlorethylene, etc. The field, however, in the present state of knowledge, is limited by the fact that there is so far no available metal or other substance which has the ruggedness of material now employed in organic synthesis, plus the necessary resistance to the corrosive action of wet chlorine gas and hydrochloric acid. The search for such substances is one of the present problems of the industry. In the treatment of organic substances, such as petroleum, considerable progress has been made in recent years, but the side reactions set up are troublesome.

The use of chlorine compounds as solvents increases slowly in North America, because they cannot compete with gasoline or solvent naptha in price, and price outweighs considerations of safety. Most of the chlorine solvents are not flammable, and have a low, if any, electrical conductivity. Furthermore, as compared with Europe and England, little wool grease is recovered in North American woolen mills, and where it is recovered solvent naptha in closed systems is used. Europe has built up a good technic in the recovery of wool grease, etc., with chlorine compounds. The chlorine solvents have varying degrees of stability, and this tends to restrict their use where moisture and heat are present, because if they break down and form hydrochloric acid, corrosion, unless checked, sets in. The principal chlorine solvent now in use is carbon tetrachloride, the well-known fire-fighting fluid of hand fire extinguishers.

No discussion of the economics of chlorine is complete without reference to the large part that chlorine played in the poison gas warfare of the World War. What will come about in the unhappy event of more war is a matter of prophecy, but the fact remains that a going commercial manufacture of chlorine in times of peace for the industrial arts, the sciences and the health of a nation, is a constant element of military preparedness at no expense to the taxpayer.

We have tried in the foregoing remarks to outline as briefly as possible something of the history and economics of chlorine. To sum it all up in a sentence or so, the manufacture is a difficult enterprise, quite overdone by reason of the restricted uses of chlorine and the fascination which the electrochemical industry works on the mind of man. The industry in North America has had to manufacture and sell cheaply, find markets and new uses, switch largely from bleaching powder to liquid chlorine, provide technical service, and adjust more or less imperfectly the economics of three distinct substances evolved in one major operation to a rapidly changing industrial structure. A capacity bearing a reasonable relation to consumption, a decent return on its capital and the continuance of research are essential to this key industry.

Permanence of Rope Fiber Paper

BOSTON, Mass., July 26, 1926.

Editor PAPER TRADE JOURNAL:

In the June 24th issue of the PAPER TRADE JOURNAL, page 46, appeared a paragraph under the heading—"Permanence of Rope Fiber Papers."

The paragraph was based on a report of the Bureau of Standards. We enclose copy of this report as it seems impossible that you would have broadcasted a statement so sure to injure the high reputation of "rope" paper for permanency if you had been cognizant of the inadequacy and lack of pertinence of the data in that report.

You will note that only four lots of paper were tested and that two of these are of no significance as the samples were composed of Jute and Wood fibers. Any comparison of strength must then be made between that paper styled "No. 2 Rope" made in 1898 and that styled "100 Per Cent Old Manila" made in 1925. This very nomenclature indicates that the older paper was composed of inferior fiber and was probably far from being all manila.

Since it is apparent that the papers tested were not of similar composition it is hardly necessary to raise the question as to whether the stock was processed to give the finished paper the same physical characteristics. Folding Endurance, similarly to Tearing Strength and Tensile Strength, is greatly influenced by beating, machining and finishing, and every manufacturer of rope paper is turning out constantly paper composed of 100 per cent manila which will vary greatly in these tests in accordance to the characteristics required in the finished paper.

In many of these sheets folding endurance would be sacrificed in order to develop more essential characteristics. You, however, attribute wholly to age the low folding endurance of the old paper. There is no evidence that the comparison is between similar papers, but rather is the opposite indicated.

HOLLINGSWORTH & VOSE CO.,
V. Hollingsworth, Pres.

The copy of the report from the Bureau of Standards referred to in the foregoing is reprinted below:

DEPARTMENT OF COMMERCE

BUREAU OF STANDARDS REPORT ON TESTS OF ROPE PAPERS

B. S. No.	Marked	Weight 25x40, 500 pounds	Weight 24x36, 500 pounds	Bursting Strength points	Ratio B.S. to Wt. (25x40) per cent
4864	No. 2 Jute—1901.....	127.6	110.2	90.4	70.8
4865	85% Jute 15% Cw.—1924.....	80.5	69.3	52.5	65.2
4863	No. 2 Rope—1898.....	98.4	85.0	83.7	85.0
4866	100% Old Manila Rope—Aug., 1925	95.4	82.1	138.9	145.6

	Fiber Composition		Folding Endurance	
B. S. No.	Manila & Jute per cent	Coniferous per cent	Mach. Dir.	Cross Dir.
4864	80	20	223	89
5865	85	15	255	166
4863	100	..	1217	151
4866	100*	..	7819	3475

(*) Appears to be at least three-fourths manila.

Remarks: Folding endurance tests were made on the Mass. Institute of Technology tester under a tension of one kilogram.

All weight and strength tests made under standard conditions of 65% R. H. and 70° F. temperature.

This report is not to be used in full or in part for advertising or sales promotion.

GEORGE K. BURGESS, Director.

Otto Nordstrom Returns to Sweden

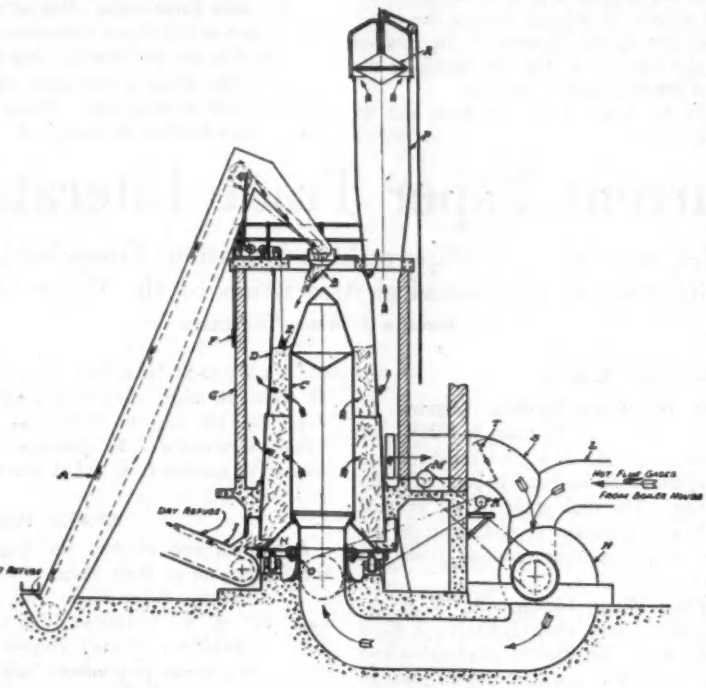
Otto Nordstrom, of Sundsvall, Sweden, who has been at Camas, Washington, for the past three months, has returned home.

Mr. Nordstrom has completed the adjustments on the installation of two of his drying towers for chips at the new sulphate pulp mill of Crown Willamette Paper Company at Camas, Wash., and reports that they are operating very satisfactorily.

The drying tower was first designed by Mr. Nordstrom for drying sawmill waste for steam generation using the dry stack gases and a number of installations are in use for this purpose in Europe. In this case, however, the material dried is the chips going to the sulphate digesters and the source of heat is the gas from the sulphate recovery furnaces. While the operation has not been sufficiently long for exact data some very remarkable results are apparent.

As the gases from the recovery furnaces are passed through chips in the tower which is from 30 to 40 feet in height they are filtered and not only is there removed the volatilized chemicals but also practically all the vile odors usually prevalent in them are destroyed. The chips as they come to the tower contain about 50 per cent moisture which in drying is reduced to 2 or 3 per cent or practically oven dry. All the chemicals in the gases remain in the chips and are returned to the recovery furnaces with the sawdust after screening.

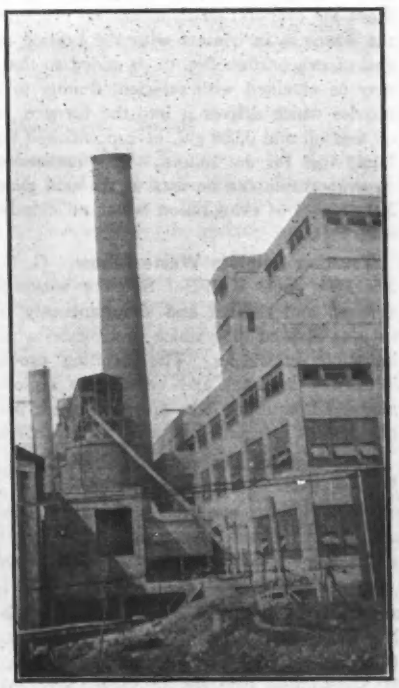
A number of tests were made on the chips both wet and dry. It was found with the dry chips there was an improvement in a number of respects. The time of filling the digester was considerably less, due to the chips being clean and polished from passage through the drier, and a materially larger quantity of wood substance could be introduced into the digester. Several tests showed that with dry chips there was nearly twelve and a half pounds of dry wood substance per cubic foot of digester space as against 9.8 pounds dry substance with chips of about 50 per cent moisture content. This may be due partly to the smoothness of the chips as well as to the shrinkage in drying. It is probable that the shrinkage does not become greatly apparent until the



SHOWING PRINCIPLE OF NORDSTROM TOWER

IN COURSE OF ERECTION

OTTO NORDSTROM



IN OPERATION

TECHNICAL SECTION, PAGE 41

moisture content is below 20 per cent. For reduction of the moisture content was found to have no detrimental results on the quality of the pulp or paper.

There can be seen in the picture at the left on the preceding page the inner conical tower of perforated steel and the outer one of perforated brick, between which the chips are dried. An outside wall of brick surrounding the whole is erected as the foundation, a part of which can be observed at the lower right corner of the photograph.

Mr. Nordstrom stated that the mercaptan odor in the gas from the incinerator disappeared entirely by passage through the tower and by taking the gas from the digester blowoff to the rotaries and the gas leakage from the smelters to the fan supplying the tower, almost all the odor of the mill can be removed.

The mechanical design of the tower was very good and no changes whatever were necessary. Its operation is extremely simple, being controlled automatically by means of thermostats.

G. E. Lofgren, engineer of Combustion Engineering Corporation, Ltd., Toronto, Canada, who handles the Nordstrom drying tower in Canada and United States, was with Mr. Nordstrom and expressed himself as satisfied with the installation which is the first of its kind in the world.

Just before Mr. Nordstrom sailed for home he was gratified at getting advices that orders had been placed at Toronto for two of his towers, to be used for drying wood room refuse in connection with paper mills. One of these is for the Consolidated Water Power and Paper Company at its Wisconsin Rapids plant. The other is for the Thunder Bay Paper Company, Ltd., at Port Arthur, Ont., where a new paper mill with sulphite and mechanical pulp mill is being built. These two installations will be the first of their kind on the continent.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

By Clarence J. West, Chairman

Sulphite Waste Liquors

Process for Clarification of Waste Sulphite Liquor. U. Jordan. Ger. pat. 422,328. Papierfabr. 24, 13 (Jan. 4, 1926). 100 parts of waste sulphite liquor (36 to 38° Be.) are treated with an intimate mixture of 5 parts hydrochloric acid and 10 parts of tetrahydronaphthalene with stirring. The dark color of the original liquor rapidly changes to yellow in a manner depending on the extent of the treatment. The yellow product resulting from this operation is an excellent adhesive. —J. L. P.

Economical Use of Sulphite Waste Liquor. A. W. Allen. Chem. Met. Eng. (Dec. 25, 1925); Paper Trade J. 82, No. 3, 48-50 (Jan. 21, 1926). A description of the Peebles quadruple-effect evaporator plant now in successful operation at a sulphite plant in the Sierra Nevadas. It is based on the principle of high solution pressure and rapid flow through heaters that form units separate from the evaporation chambers, no evaporation taking place while the liquor is in contact with the heating surfaces. Towards the end of evaporation fuel oil is added so that a higher solid content may be obtained with sufficient fluidity to work in the atomizing nozzles which deliver it into the furnace. A mixture of 640 gal. of fuel oil and 3,000 gal, of concentrated liquor forms a desirable liquid fuel for the boilers.. The condensate from the early stage of evaporation can be used in the acid plant, while that from the later stages of evaporation is not sufficiently acid to cause trouble. —A. P. C.

Treating Sulphite Waste Liquor. G. C. Howard. U. S. pat. 1,551,882, Sept. 1, 1925. Sulphite waste liquor is mechanically agitated and aerated and simultaneously treated with a reagent such as slacked lime which precipitates a mixture of organic and inorganic substances. The resulting product, without filtration, is further agitated and aerated to remove precipitated organic matter substantially free from inorganic matter, as a froth. The precipitated inorganic matter is afterwards separated.—A. P. C.

New Lignone Derivatives. C. F. Cross. U. S. pat. 1,553,220, Sept. 8, 1925. Soluble lignone derivatives obtained by treatment of lignocellulosic materials with sulphur dioxide are treated with an oxidizing agent such as chromic acid to produce substances which may be used for sizing or filling wood.—A. P. C.

Waste Liquors and Gases of the Paper Industry. A. Schrohe and Clarence J. West. Paper Trade J. 81, No. 14, 62-64 (Oct. 1); No. 15, 55-56 (Oct. 8); No. 17, 56-58 (Oct. 22); No. 18, 106-108 (Oct. 29); No. 19 57-59 (Nov. 5); No. 20, 54-56 (Nov 12); No. 21, 57-58 (Nov. 19); No. 22, 55-56 (Nov. 26); No. 23, 61-63 (Dec. 3); No. 24, 50-52 (Dec. 10); No. 25, 47-50 (Dec. 17); No. 26, 50-52 (Dec. 24, 1925). Translation of Schrohe's article (Pulp and Paper 23, 1448, Dec. 10, 1925; Paper Trade J. 82, No. 1, 60, Jan. 7,1926) supplemented by numerous references which raised the number of patents from 202 in the original to 534 in the translation.—A. P. C.

Alkaline Processes

Apparatus and Method for Experimental Investigations of the Production of Soda Pulp. D. E. Cable, R. H. McKee and R. H. Simmons. Paper Trade J. 82, No. 8, 158-161 (Feb. 25, 1926) Paper Mill 49, No. 9, 138-144 (Feb. 27, 1926). A detailed description of a small experimental chipper by means of which chips of uniform length can be produced, and of a small experimental gas-heated, rotary soda pulp digester, and also of the technique of the yield tests carried out with this digester.—A. P. C.

Modern Soda Pulp Mill. E. P. Wood. Paper Trade J. 82, No. 8, 147-150 (Feb. 25, 1926); Paper Mill 49, No. 9, 162-164 (Feb. 27, 1926). Detailed description of the pulp mill of the Tonawanda Paper Co. at N. Tonawanda, N. Y.—A. P. C.

Alkali Loss in Sulphate Pulp Manufacture. .R. Sieber. Papierfabr. 24, 6-7 (Jan. 4, 1926). The total alkali loss in sulphate pulp manufacture is stated to be 5 to 10 kg. per ton of pulp. The distribution of these losses is discussed.—J. L. P.

Variation in Alkalinity During Cooking of Soda and Sulphate Pulp. C. Kullgren. Teknisk. Tids. 22, 174 (1925); Papierfabr. 24, 20-23 (Jan. 10, 1926). The usual methods of determining the alkali in black liquor yield results of doubtful value owing to the hydrolysis of the sodium sulphide. The Koellichen method [Z. Phys. Chem. 33, 129 (1900)] of determining alkali is based on the fact that diacetone alcohol decomposes to acetone with a velocity which is proportional to the hydroxyl ion content of the solution. This procedure is recommended for evaluating the alkali in black liquor. As a result of cooking tests on fir wood, using both the soda and the sulphate processes, it is shown that although the alkalinity in normality was about the same initially in both liquors there was a more rapid decrease in the alkalinity of the sulphate liquor up to 150°. During the latter part of the cooking period, at which the maximum temperature prevailed, the sulphate liquor was less alkaline than the soda liquor. Thus, the cellulose is attacked much less by the sulphate liquor and the pulp yield is higher. The alkalinity of the soda liquor was about one-seventh of the initial amount, while that of the sulphate solution was much less. The role of sodium sulphide in the manufacture of pulp and the rapid diminution of the alkalai content are discussed. Sodium hydrosul-

phide, the hydrolysis product of sodium sulphide, does not exert a solvent action on the wood but reacts with it to form sulphur compounds. These substances are then more easily soluble in the sodium hydroxide and the alkalinity of the cooking liquor is thereby reduced.—J. L. P.

Wagner Stationary Recovery Furnace for Soda and Sulphate Mill Chemical Recovery. C. L. Wagner. Paper Trade J. 82, No. 8, 177, 179 (Feb. 25, 1926); Paper Mill 49, No. 10, 10, 44 (Mar. 6, 192). Description of the Wagner furnace, designed to take the place of rotaries and leachers in soda mills and of rotaries and smelters, with or without disk evaporators, in sulphate mills. The concentrated black liquor, at about 35° Be., is sprayed into the furnace without addition of auxiliary fuel, and the heat used for steam raising. The fused ash flows directly into the dissolving tank. Careful regulation of the air is required with sulphate black liquor, but not with soda liquors. Discussion of the heat balance shows that the amount of steam generated is almost sufficient for digesting, evaporating, causticizing and bleaching; and that by the use of high pressure turbines power may also be derived, so that the pulp mill can be made practically independent of outside fuel. Less heat is recovered from sulphate than from soda black liquors.—A. P. C.

Evaporator Test Code for Pulp Mills. J. E. Plumstead, Ralph Mair and C. L. Wagner. Paper Trade J. 82, No. 8, 203 (Feb. 25, 1925); Paper Mill 49, No. 9, 88 (Feb. 27, 1926). Code drawn up by the sub-committee of the Soda Pulp Committee of TAPPI.—A. P.-C.

Heat Problems in the Sulphate Mill. K. M. Thorsen. Paper Trade J. 82, No. 5, 62-65 (Feb. 4, 1926). Comparison of the usual recovery system in sulphate mills with the Sandberg-Sundblad system, showing the advantages of the latter.—A. P.-C.

Carbon Pigment from Black Ash. S. F. Walton assignor to Kalmus, Comstock & Westcott, Inc. U. S. pat. 1,552,973, Sept. 8, 1925. The black ash residue of the soda process is treated, e. g., by sedimentation and flotation in water, to remove the lighter and heavier portions and leave a carbonaceous residue which is then ground to form a pigment.—A. P. -C.

Alkali Determination in Black Liquors from Sulphate Pulp Manufacture. A. Matzner. Wochbl. Papierfabr. 56, 1556 (Dec. 19, 1925). The alkali in black liquor can be estimated by direct titration after a previous treatment with neutral sodium chloride. 20 cc. black liquor are treated with sufficient sodium chloride to form a thick syrup. Small amounts of distilled water and salt are then added with shaking until the volume becomes about 250 cc. An excess of salt should always be present. Heat to boiling, filter, wash with hot saturated salt solution, and dilute to 500 cc. An aliquot portion of the liquid is titrated with standard acid.—J. L. P.

Chlorine Process

Use of the Chlorine Gas Process in the Paper Industry: Its Present Applications and Future Possibilities. Giulio Consiglio. Papier 28, 1291-1300 (Dec. 1925). The mill of the Elettrochimica Pomilio, at Naples, for the treatment of esparto, uses 160 to 180 kilos of caustic soda, 400 k. of chlorine gas, and 20, k. of chlorine as hypochlorite, per ton of bleached pulp produced. The latter contains 80 to 81% of cellouse and 1.0 to 1.5% ash and has a copper number of about 2.4. The pulp is used in Italy and exported to Germany, England and United States. The spent alkaline liquor can be used for the preparation of a synthetic tan, for the preparation of an insecticide which can be used instead of hydrocyanic acid for the destruction of the parasites of certain fruit trees, and for the preparation of a binder for fuel briquettes. The process is very flexible and allows of wide variations in the relative proportions of soda and chlorine used: in the treatment of wheat and rice straws and of esparto on a commercial scale the consumption of raw materials varied from 11.2 to 33.6% caustic soda, and from 83.9 to 88.0% chlorine. Yields obtained under various conditions of treatment were: wheat straw 38.5 to 42.0%, rice straw 31.7 to 38.9%, esparto 38.5 to 42.0%. Tests have shown the possibility of economically treating bagasse by the chlorine gas treatment; and the possibility of modifying the process by elimination of the preliminary alkaline impregnation for the production of pulp suitable for the manufacture of news print at a cost lower than that of groundwood—A. P. -C.

Process and Apparatus for the Continuous Chlorination of Cellulosic Materials by Means of Chlorine Water. A. R. de Vains. U. S. pat. 1,556,498, Ooct. 6, 1925. In the continuous chlorination of cellulosic materials as carried out in the de Vains process, the temperature of the reacting mass increases in direct proportion to the quantity of chlorine absorbed by the cellulosic material. If the active carbonyl groups (CO) are saturated with chlorine, the temperature within the chlorination vessel will not remain in the neighborhood of that of the solution of chlorine continuously fed into the chlorination vessel; the chlorine set free in the gaseous state being unable to combine with organic matter will create a chlorine atmosphere which will be unable to escape. In this case an increase in pressure within the apparatus would ensue, which would bring about a disturbance in the chlorination of the material, which in turn would inevitably result in a leakage of chlorine. According to the present invention this drawback is prevented by using the variations in the pressure obtaining in the atmosphere of the chlorination vessel to control the feed of solution of chloride, that is to say, for diminishing the feed if the pressure increases, and for increasing it if the pressure diminishes. —A. P. -C.

Manufacture of Pulp With the Aid of Chlorine. W. Schacht. Papierfabr. 23, 759-762 (Nov. 29, 1925). Polemic with U. Pomilio (*Wochbl. Papierfabr.* 56, 1115-1121 Sept. 12, 1925). The manufacture of pulp with the aid of gaseous chlorine leads to the rapid production of hydrochloric and hypochlorous acids in varying amounts as well as to the chlorination of the lingin present. These acids attack the fibers in a deleterious manner. The de Vains process, consisting of treating the fibrous material with alkali followed with chlorine water, also tends to remove the hemi-cellulose constituents, thereby, resulting in a decreased pulp yield. The Schacht chlorine process consists in removing most of the lignin with chlorine salts, followed by chlorine water. Less hydrochloric acid is produced by this method and less chemicals are required. Furthermore, less labor is required. Esparto pulp by this method yielded a paper possessing a density and thickness closely approaching those of a paper made from esparto pulp by the soda process.—J. L. P.

Mechanical Process

Proposed Code for Comparison of Grinders. W. E. Brawn. Paper Trade J. 82, No. 8, 191-195 (Feb. 25, 1926); Paper Mill 49, No. 9, 104-108 (Feb. 27, 1926); Pulp & Paper 24, 249-251 (Mar. 4, 1926). Tentative code developed by the mechanical pulp committee of TAPPI.—A. P. -C.

Kerr Wood Grinder. Pulp & Paper 24, 133 (Feb. 4, 1926). This consists essentially of a revolving grindstone, above which is a tall rectangular box which serves as magazine for the sticks, which are slightly closer together at the top than at the bottom. The sides are hinged at the top so as to provide a variation in the size of the grinding surface as the stone wears down. Four tracks, two on each side of the magazine, formed of chain links, travel downward under the urge of weight of the wood in the magazine. They travel over sprockets at the top of the magazine, but not at the bottom so as to permit the tracks to come closer to the stone and to prevent danger of pockets' forming by the arching of wood in the magazine. The main pressure on the stone is exerted by an air or hydraulic cylinder through a press foot, in addition to the weight of the wood in the magazine. The grinder has a minimum of moving parts and very few points of wear.—A. P. -C.

Artificial Stone for Grinding Wood. H. Amos. Fr. pat. 591,586. The invention provides for certain features in the mechanical construction of the stone to strengthen it against the tre-

mendous strain to which large sized stones are subjected during the grinding operation. They consist essentially of metal or reinforced concrete "mandrels" in the body of the stone between the flanges, to prevent excessive pressure by the latter. Radial armatures are also provided extending nearly to the circumference to which the stone will be worn down.—A. P. -C.

Wood Grinder. Amme, Giesecke and Konegen. Ger. pat. 421,188. Wochbl. Papierfabr. 56, 1496 (Dec. 5, 1925). Through an arrangement of several pressure cylinders, a large effective grinding surface is produced.—J. L. P.

Device for Regulating the Pressure of Wood Grinders Operated by Turbines. Amme, Giesecke and Konegen. Ger. pat. 423,060. Wochbl. Papierfabr. 57, 105 (Jan 23, 1926). The pressure exerted on the wood in wood grinders is regulated by the water level through a valve arrangement.—J. L. P.

Comparative Tests with Voite Continuous, Magazine, and Press Grinders. J. M. Voith. Papierfabr. 23, 813-814 (Nov. 29, 1925. A report on comparative tests on various types of wood grinders. The continuous grinder produces the largest quantity of groundwood with greater economy, compared to the magazine and press grinders.—J. L. P.

Mechanical Pulp and Its Physical Property of Wetness. J. H. Mowat. World's Paper Tr. Rev. 84, 1988-1996 (Dec. 25, 1925); Paper Maker & Brit. Paper Tr. J. 71, 59-62 (Jan. 1, 1926). A discussion of the importance of wetness (or freeness) of groundwood in the manufacture of news print, and of the characteristics of the pulp according to its process of manufacture and condition of reaching the paper mill. A. P. -C.

How News Print Is Produced in America. M. Christiansen. Wochbl. Papierfabr. 56, 1553-1554 (Dec. 19, 1925). A résumé of American news print production methods.—J. L. P.

Miscellaneous Processes

Resolution of Plant Material by the Use of Nitric Acid According in the Process of the Dresden Textile Research Institute. P. Krais. Wochbl. Papierfabr. 56, 1513-1517 (Dec. 12, 1925); Papierfabr. 23, 797-799 (Dec. 13, 1925). For the manufacture of pulp from Argentine reeds, straw, sugar cane, other tropical plants, and wood chips, etc., under atmosphereic pressure, equimolecular amounts of saltpeter and sulphuric acid were satisfactory. A solution containing 3 to 5% nitric acid was sufficient to resolve these raw materials into fibers after a digestion period of 6 to 8 hr. at 95 to 96° C. After removal of the acid, washing and neutralizing with lime or soda ash, the fibrous mass was easily broken into its ultimate constituents. Washing and bleaching operations follow. A brief review is given of other digestion processes involving nitric acid. A Krupp chromium-nickel-steel was practically resistant towards the action of the chemicals. In the digestion process the action of the acids is allowed to continue until the non-cellulosic constituents are oxidized whereby the concentration of the acid is decreased so that the cellulose is not materially damaged. Straw pulp by this process yields a longer fiber than by the usual sulphate process. The former is stained more intensively by methylene blue than sulphate straw pulp. No analytical data are given. The economy of the process is briefly discussed. —J. L. P.

Beating

Pulp Beater. R. R. Blight. Eng. pat. 243,640. In beating and hydrating apparatus for paper stock, suitable for treating fibers of wood, grass, straw, etc., but unsuitable for rag, ropes, and similiar fibers, the stock is pumped to rotating nozzles and impinges against blades preferably set at an angle of about 30° to their radii.—A. P. -C.

Beating Tester. Schopper-Riegler System Patented. Paper Trade J. 82, No. 1, 58 (Jan. 7, 1926). Brief description of the Schopper-Riegler beating tester and of its importance in beating control.—A. P. -C.

Beating. W. G. MacNaughton. Paper Trade J. 81, No. 24, 43-44 (Dec. 10, 1925). Brief outline of modern tendencies in the evolution of the mechanical treatment of paper making stock from the use of hollanders to the use of engines of the jordan type. —A. P. -C.

Niagara Beater. G. M. McGinnis. Paper Mill 49, No. 51, 6, 8 (Dec. 19, 1925). A description of the distinctive features of the Niagara beater, with a discussion of its advantages over the hollander.—A. P. -C.

New Hydrating Process. R. R. Blight. Eng. pat. World's Paper Tr. Rev. 84, 1394-1398 (Oct. 30, 1925). The hydrating chamber consists of an apparatus wherein the stock is discharged from a rotating nozzle device and impinges upon a number of spaced blades which are similar to the ordinary beveled fly bars of a beater roll, and are arranged concentrically within a casing. A rotating nozzle device, mounted axially of the casing, discharges the stock so that it impinges on the blades. A further feature of the invention is that the nozzle device is provided with a number of discharge orifices having flaring mouths. The blades are mounted so as to be spaced from the wall of the casing, and to have spaces there-between—A. P. -C.

Stock Circulation in the Beater. S. Smith. Papierfabr. 23, 777-781 (Dec. 6) 802-806 (Dec. 13, 1925). The various relations which influence the circulation of paper stock in the beater are analyzed. The transporting of the stock in the trough and by the roll is discussed from a mathematical standpoint.—J. L. P.

Power Consumption of the Beater. Walter. Wochbl. Papierfabr. 56, 1551-1552 (Dec. 19, 1925). Polemic with Mallickh (Wochbl. Papierfabr. No. 43).—J. L. P.

Fibrage Theory and Older Theories of the Beater. S. Smith. Wochbl. Papierfabr. 57, 96-97 (Jan. 23); 148-151 (Feb. 6, 1926). A brief critical review of some of the older theories on the action of the beater together with the more recent fibrage theory of the author.—J. L. P.

Effects of Chemicals on the Papermaking Properties of Pulps. R. Sieber. Papierfabr. 23, 765-767 (Nov. 29, 1925) Description of an investigation dealing with the effect of acids, alkalies, and alkaline earth hydroxides on the strength and beating properties of pulps. Treatment of a sulphate pulp with 1% sulphuric acid for 3 hr. at 50° C., resulted in a diminution of the paper strength to 13% of the untreated pulp, but the beating properties as determined by the Lampén ball mill were not affected. Lactic acid produced no change when allowed to act in a 2% solution on sulphite pulp for 48 hr. at 30° C. This was true in general of organic acids. Comparatively strong cold alkaline solutions also exert no effect. Treatment of sulphite pulp with calcium or barium hydroxides at 100° C. for 2 hr. affected the strength and beating properties adversely, but the former was partially restored by using 0.1 normal sulphuric acid. When pulp was treated with a 10% solution of sodium sulphate, a poorly beaten stock, with inferiod strength, was obtained. A similiar result was observed when a sulphate pulp, after being dried for 14 days at 100° C., was beaten and tested.—J. L. P.

Alkali-Proof Papers

SPECIAL INQUIRY No. 52

A member writes: "I should like to obtain some information from TAPPI members on the Service to Members Plan. The subject is alkali-proof papers for use as a soap wrap.

1. What qualities are required of an alkali-proof paper?
2. What is the best test for such paper?
3. What type of furnish is satisfactory and what type unsatisfactory?
4. I assume it is customary to use a furnish with a good proportion of alkali treated fiber. Tests with caustic soda indicate soda pulp to be practically as much discolored as sulphite pulp. What causes the discoloration and why does not soda pulp withstand the test?"

Those who contribute information will receive a copy of all the responses in blank. Send answers to

W. G. MACNAUGHTON, SECRETARY, TAPPI,
18 East Forty-first Street, New York, N. Y.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

20 Per Cent Returns on Power Plant Investment*

Use of High Pressure Equipment Will Pay by Reduced Losses

By Andrew F. Sheehan, Mechanical Engineer

The two sources of greatest loss in any steam power plant are the heat units discharged up the chimney and the heat rejected in the exhaust from the engines. In some plants, such as metal working industries, no steam is required in manufacturing and only a fraction of the exhaust can be used in winter months for heating. Consequently it is often more economical for these plants to purchase all or part of their power than to install elaborate and expensive power equipment. But in plants like textile finishing, woolen and worsted mills, and paper mills the steam engine or turbine is the logical source of power and remarkable economies can be effected by elimination of the two losses referred to above.

Calculations for a Paper Mill

Consider a paper mill with a capacity of 35 tons daily, having no water power and containing typical paper mill power equipment. This equipment consists of steam boilers run at about 130 lb. pressure and individual steam engines on each paper machine. Power for the main shaft is supplied by a condensing engine. The plant operates 24 hr. per day.

The total power required is about 1000 hp., of which 150 hp. is needed for the paper machines, the rest being used in the beater room, rag cutting room and for finishing. Roughly, the fuel consumption is around 35 tons daily, or one ton of coal per ton of paper produced. With an evaporation of 8.5 lb. of water per lb. of coal the steam used per hr. is

$$\frac{35 \times 2000 \times 8.5}{24} = 24{,}791 \text{ lb.}$$

The usual type of steam engine on paper machines has a steam rate of about 50 lb. per hp. when using steam at the initial pressure of 130 lb. and exhausting into the dryers at 15 lb. back pressure. With the paper machine engines developing a total of 150 hp. their steam consumption is 7500 lb. per hr. In addition, live steam is used to dry paper if the exhaust from the engines is insufficient for the demands of the dryers. With an output of 35 tons daily, 2916 lb. of paper must be dried per hr. and each lb. of paper contains 75 per cent water when entering the drier. So for each pound of dry paper manufactured, 3 lb. of water must be evaporated, and this calls for 3.5 lb. steam. Thus, 10,206 lb. of steam is required per hr. for drying and, as 7500 lb of exhaust is supplied, the live steam consumption will be 2706 per hr.

Why Figures Are Given in Detail

These figures are given in detail for the reason that the steam for drying paper must be furnished under all methods of operation and the amount (10,206 lb. per hr.) is constant for the tonnage of paper produced regardless of the power source. We may say it is the irreducible minimum in steam consumption and this assumption is the basis of the suggestion given here. Total steam used 24,791 lb., minus 10,206 lb. gives 14,585 lb., the amount used per hr. by the main engine and feed and condenser pumps.

With the exception of the small quantity used to heat feed water the heat in this 14,585 lb. of exhaust is wasted since the steam is condensed by water pumped out of the river at a temperature of about 60 deg. and this water is discharged to the sewer, or back to the river again, at a temperature of over 100 deg. The wastefulness of this power generation is evident. To use the exhaust of the main engine in the driers would be impossible since the driers require only 2706 lb. of steam above the amount supplied by the machine engines. The main engine exhaust is several times this amount, and is at a pressure too low to be suitable for drying paper. To generate this 14,585 lb. of steam takes

$$\frac{14{,}585}{8.5} = 1715 \text{ lb.}$$

of coal per hour. and as the exhaust contains at least 85 per cent as much heat as the live steam the fuel wasted in the exhaust is 0.85 x 1715 = 1458 lb. per hr. The preventable waste in a mill of this type is 1458 lb. of coal per hr. out of a total of 2916 lb. or 50 per cent of the annual coal supply is wasted. In dollars and cents, assuming 300 working days per year in this industry and $6 a ton for coal, this amounts to 300 x 35 x 0.50=$31,500 annually.

Large Condenser Loss

Even if the most efficient unaflow engines or turbines are used at 130 lb. pressure there will still be a large condenser loss, although it will be greatly reduced. The best steam rate of an engine of the most efficient design at 130 lb. initial pressure and 15 lb. back presure is about 28 lb. per hp. and if all the process steam is passed through the engine and exhausted to the driers only 10,206 = 364 hp. can be secured in this way. As the mill requires 1000 hp. the balance of 636 hp. must be generated by a condensing engine with the losses entailed in this method of power supply.

Obviously, the only way in which we can secure the total power supply without the losses involved in present methods is to generate all the power required by the mill, without exceeding

* From "Manufacturing Industries."

10,206 lb. of steam per hr. This necessitates a radical change in equipment. We have shown that at 130 lb. pressure the steam rate of engines is too high to generate all the power on the steam used for manufacturing purposes. But in several technical journals a few months ago a description of a power plant installed in a Western paper mill cited how remarkable economies were effected by using steam at a higher pressure than had been used before for the purpose. Engines taking steam at a pressure of 300 lbs. and exhausting at a back pressure of 15 lb. per hp. hr., or 46 per cent less than the best rate attained by engines at 130 lb. pressure.

By using this high pressure we could generate $\frac{10,206}{15} = 680$ hp. on the steam required for drying paper, which is a distinct gain as it reduces to 320 hp. the amount of power that is left for the condensing engine to supply.

Low Steam Rates in Europe

European engineers have attained remarkably low steam rates with engines operated at pressure over 600 lb. per sq. in. and a steam temperature of 750 deg. A steam rate of 10.75 lb. per. hp. hr. is possible by expanding steam from 600 lb. pressure and 750 deg. down to a back pressure of 15 lb. By generating 10,750 lb. of steam at this pressure and exhausting to the driers we can secure our total power and dry paper with the exhaust. This shows a slight waste of steam amounting to 10,750 — 10,206 = 544 lb. per hr. The type of engine used at this pressure is specially designed and exhausts into a standard unaflow engine at a back pressure of 130 lbs. to 150 lbs. which in turn will exhaust to the driers at 15 lb. pressure.

Since the mill has already an engine designed to run at 130 lb. pressure the only equipment necessary for the adoption of this plan is a high pressure engine to exhaust at 130 lb. into the old engine, and boilers to generate steam at 600 lb. with superheaters to raise the temperature to 750 deg. No condenser will be used in this type of plant as all of the exhaust except 544 lb. per hr. can be used in drying paper.

Need Not Be Wasted

This 544 lb. need not be wasted. In present plants feed water is seldom heated higher than 212 deg. with exhaust steam, but in the new plant great economies can be made by heating it to a higher point. The feed water in the high pressure plant will be pure condensate from the paper machines at 250 deg. with a small amount of make-up water to replace any leakage in pipe lines and equipment. Since a pressure of 130 lb. will exist in the exhaust pipe from the high presure engine and there is a surplus of exhaust over the needs of the driers, we can install a feed water heater in this exhaust line and heat feed water to 350 deg. We will have to heat about 10,750 lb. of feed water per hr. from 250 to 350 deg. which calls for about 1200 lb. of steam to be bled from the high pressure exhaust pipe. Bleeding 1200 lb. per hr. at 130 lb. pressure will reduce the amount of steam exhausted from the low pressure engine by about 600 lb. per hr. which eliminates the 544 lb. of excess exhaust that would otherwise exist. The total steam consumption of the mill is now only 10,206 lb. per hr. for both power and drying in place of the former amount of 24,791 lb. per hr., so the steam consumption is reduced 58 per cent thru the use of higher pressure.

Coal Saving

The exact coal saving is found as follows: As steam at 600 lb. superheated to 750 deg. contains 13.5 per cent more heat above the feed water heat content at a temperature of 350 deg. than steam at 130 lb., which is not superheated, contains above its feed water heat content at 250 deg., the net fuel saving is 53 per cent, assuming equal boiler and furnace efficiencies. The saving by eliminating the heat loss in the exhaust is $33,390 a year and a further saving is possible by using air preheaters to reduce the chimney gas loss which often runs as high as 20 per cent in old plants.

Flue gasses will leave the high pressure boiler at a temperature of 550 deg. This temperature can be reduced to 250 deg. by heating the combustion air from the usual temperature of 70 deg. to 370. Efficiencies of 85 per cent have been attained by this method and in very large plants over 90 per cent has been reached. Burning 14,000 B. t. u. coal at 85 per cent efficiency will give us an evaporation of 10.32 lb. of water per lb. of coal and only 990 lb. of coal will be needed to generate 10,206 lb. of steam per hr. or 11.8 tons per day. Thus the maximum saving is 66 per cent and the fuel bill is reduced from $63,000 a year to $21,384, a clear gain of $41,616 a year by the correct design of power equipment.

Overhead Charges High

The overhead charges involved in a plan of this kind are high, but estimating the cost of the high pressure boilers and engines at $104,000, which is practically double the cost of new boilers and engines for ordinary pressure, the fuel saving pays a dividend of 40 per cent of the money invested. Deducting fixed charges of 13 per cent for interest, depreciation, insurance and upkeep still leaves a net cost reduction of $28,496 per year. If a concern has a good financial rating and can borrow the necessary capital at 6 per cent, it should not hesitate to reinvest it in improved power equipment which returns the original investment in less than five years.

Oil and Gas Power Prize Awarded

A series of meetings held throughout the country during the week of April 19-24, 1926, having for their purpose the focusing of attention on the part of engineers, chemists, physicists, operating men and the industries on recent progress and immediate possibilities in the utilization of oil and gas for power purposes, resulted in many papers of interest. These meetings were sponsored by many organizations of a technical and governmental nature, The American Society of Mechanical Engineers included, and were guided by a Steering Committee who aided the organization of the local meetings on the basis of constituting an Oil and Gas Power National Conference.

A cash prize of $100 was offered for the best paper submitted during this week, and the Steering Committee now announce that it has been decided to award this prize to Fred Thilenius, assistant master mechanic, Prairie Pipe Line Company, Tulsa, Okla., for his paper on "Oil Engines as a Drive for Pipe-Line Pumps," presented at the April 22nd meeting of the A.S.M.E. Mid-Continent Section to which meeting all locals were invited. Mr. Thilenius is a member of the A.S.M.E., and with the consent of the participating organizations, the award will take place at the Oil and Gas Power Session during the coming A.S.M.E. annual meeting in December.

Pulp Production in Germany Increases

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 21, 1926.—Pulp production in Germany during the first quarter of the current year exceeded that of the corresponding period in 1925 by 31,203 metric tons, due largely to an increase in the output of mechanical pulp from 175,314 tons to 201,938 tons, a rise of 15 per cent, according to reports to the Department of Commerce. The output of chemical pulp, which amounted to 230,924 tons was also slightly larger than the output during the first three months of 1925. The production of paper and boards during this period, however, shows a reduction of approximately 10 per cent in comparison with the preceding year. News print production, which amounted to 110,174 tons was 6 per cent higher than the output during the first quarter of last year, but the output of other classes of paper, amounting to 269,317 tons shows a loss of 14 per cent, and that of boards amounting to 67,597 tons loss of 29 per cent in comparison with the first three months of 1925.

Improving Competition Through Associations*

By Wilson Compton, Secy. and Mgr., National Lumber Manufacturers' Association, Washington, D. C.

Competition, although it may have an exact meaning in the abstract, has in business practice no description which is either certain or uniformly acceptable. The dictionary, to be sure, defines it in simple language. But it does not describe the earmarks by which it may be identified when it is encountered in the course of industry and commerce.

To the public generally, competition suggests something about price. To many, a low price appears ipso facto as competitive and a high price is ipso facto noncompetitive; and characterized by any manner and degree of trade restraint and monopoly.

The understanding of competition is by no means uniform, even among economists. Still less uniform has it been among lawmakers, either federal or state, who have at times attempted by one type of legislation, to secure by statute conditions of competition which the enforcement of other statutes would make physically or economically impracticable.

Confronted by this somewhat vague and nebulous understanding on the part of its economic advisers and the mutually inconsistent enactments of its legislators, it is not to the discredit of the average public intelligence that it, too, has been confused and wavering in its understanding of competition.

Chief Bulwark of Individualism

Nevertheless, a few cardinal principles still adhere to the average American mind. In the first place, competition is considered to be the chief bulwark of the system of economic individualism which has characterized American commercial and industrial advancement. The second public conception of competition is that it means equality of opportunity, in that we say that competition should be "fair", "equal" and "free". In the third place, competition as commonly understood means that the business competitor be under no compulsion to do the will of another or to refrain from following his own independent judgement. These principles, while of course they do not comprise the sum-total conception of competition in its varied phases—upon which even economists do not agree—do at least offer a few practical and common-sense guides, which are safe even though they may not be fundamental.

In the business man's ordinary vocabulary, the law of "supply and demand" means in practical substance these three things: i.e., an equal chance for each competitor, a free field with no favors, and nothing to prevent each competitor from making any terms which he wishes to make.

Competition in Abstract

This is competition in abstract. Competition in practice is not quite so simple. To use the phrase of Professor Nelson of the University of Illinois, in speaking recently of the effect of association activities upon competition and prices:

> Economists, in formulating the law of supply and demand (which, of course, lies at the basis of commercial competition) have made the explicit reservation that the law only holds if it is assumed that all interested parties are intelligent enough to know their own interest and are able and ready to act thereon. Obviously they will not be alive to their interests if they are not acquainted with all the conditions affecting the supply of and the demand for the particular commodity in which interest is centered.

This, in substance, means that the working in commercial practice of the law of supply and demand requires that competing consumers and competing buyers each have comprehensive and equal information regarding the facts of both supply and of demand, and that each be in a position physically and financially to do what his individual judgment directs.

Co-operation among competitors through trade associations can improve competition by making promptly available current statistics and trade information. Combination of competing units, by merger or consolidation, or in a more limited way through joint selling agencies can, in many industries, considerably improve the physical and financial ability of competitors to follow the policy which their well-informed judgment may direct. These are, I believe, the most important improvements in the machinery and practice of competition which may be secured through some form of association.

Ignorant Competition

In many industries ignorant competition, i.e., competition uninformed of current conditions of supply and demand, can be substantially corrected by the cooperation of competitors, in trade associations, through their statistical exchange. This represents probably the most practical contribution which associations can make toward efficiency in competition and toward the elimination of the competitive wastes, which in the long run benefit nobody.

The difference between ignorant and well-informed competition may easily, in practice, become the difference between fair, free and equal competition and unfair, restricted and unequal competition. It is important, however, that this current information be equally available to seller and buyer alike. In many industries, the practice has been to confine such information to sellers only. Even among the sellers themselves, it has not infrequently been restricted in practice to those who have contributed their own reports to the current compilation of facts for the industry as a whole.

Mr. Hoover's Forward Looking Policies

In the principal industries now, however, such information is promptly made available to the public, to the advantage, I am convinced, of both buyer and seller. This constructive development in trade association policies is due in large part to the inspiration and leadership of the Secretary of Commerce, Mr. Hoover, who has, in my judgment, done more than any other man alive to stimulate forward-looking policies in American business.

Only one side, however, of this aid to efficient competition has been widely developed. Information regarding production, sales, shipment, wholesale prices and producers' stocks on hand are now available in many industries. But the corresponding information regarding transactions and stocks on hand for distributors and consumers is woefully lacking. This is indeed the most difficult type of current information to secure; and it is as necessary as it is difficult In only a few lines of trade is it available! and in still fewer is it reliable and complete. The United States Census is, for most industries, the principal source of such information. But its historical findings are of little worth to current business conduct.

Can Be Secured by Cooperative Effort

Most of this type of current information can be secured only by co-operative effort through trade associations representing either producers, distributors, or consumers. Now that the Supreme Court has removed the barrier of apprehension against the collection of trade statistics and their distribution and publication in good faith for the purpose of information, the great need in this field lies in two directions; first, that all such information be made available to buyer and seller; and, second, that the courses of statistical information regarding *distribution* and *consumption* be organized and utilized, as have those representing production.

Out of my observation as an official of one of the largest American industrial associations, I am convinced not only that such

COST SECTION

* From 1926 Year Book of the Academy of Political Science, Columbia University.

a development is practical, but that it would add greatly to the efficiency and equality of competition, promote stability, economy and continuity of business and industrial operation, and subtract nothing from the incentives to or the rewards from free and fair competition.

Next to ignorance of facts, inequality in bargaining power and in financial ability, in practice, to choose between going into and staying out of the market has been the principal deterrent to free, fair and equal competition. Again quoting Professor Nelson of Illinois: "The greater the development of efficiency in bargaining, the nearer is the approach of actual competitive conditions to ideal competitive conditions."

In the Lumber Industry

I can speak more feelingly and, perhaps, with the greatest assurance regarding the lumber industry, with whose operations I am most familiar. Competition in the lumber industry is only illustrative of similar conditions, which prevail in other basic industries, especially those involving a great number of competing units widely distributed geographically.

There are over thirty thousand saw-mills, large or small, now operating in the United States. Numerically, most of these are small producers, having no facilities for the distribution of their products other than for immediate local consumption. Probably about one thousand lumber-manufacturing companies distribute their own products, in part or whole, direct to the retail trade or to the large industrial consumers. There are about fifteen hundred wholesale dealers engaged in lumber distribution; and a large, but uncertain, number of lumber commission men and brokers who do not take title to the lumber which they buy, but act only as agent for the manufacturer, wholesaler, retailer or consumer. There are not more than ten joint sales organizations or selling agencies owned and operated by groups of saw-mills and selling their lumber output. All told, therefore there are perhaps five thousand individual agencies or units customarily engaged in the wholesale distribution of lumber in the domestic trade of the United States.

Some are big; some, small. Some handle large and well-assorted stocks; some, only boards. Some have capital and credit; some have neither. Some have knowledge of lumber; some do not. Some sell lumber they have already bought; some buy lumber they have already sold. Some guarantee grades and submit shipments promptly, upon complaint, to official inspection; some assume no responsibility, refuse inspection and decline arbitration. Some ship lumber only on signed orders; others, who cannot conveniently find a purchaser before shipment, put their lumber on wheels or in cargo on consignment and trust to luck. Some inquire about customers' credit before shipping; others, after. Some ship promptly whatever they have sold; others ship that which has not gone up in price. Some refuse cancellation of bona-fide orders; others submit, without protest, to indiscriminate cancellations.

Some carefully ship lumber of published and recognized standard grades and sizes; others, a little more; and others, a little less. Some ship mongrel grades and uncertain sizes. Some sell uniformly well manufactured lumber, made out of good timber and carefully graded; others sell lumber of uniformly poor manufacture, made out of poor timber and not graded at all.

Solemnly Called Competition

Although in some respects it reminds one of a burlesque, in the lumber business this is solemnly called "competition." But it clearly lacks many of the earmarks of the right operation of the law of supply and demand. Most of the wastes in competition in the lumber industry—and I use it simply as illustrative of basic industries generally—are due: first, to the lack of reliable information, and second, perhaps even more important, to the lack of bargaining power, specifically, the physical and financial ability at any given time either to go into the market or to stay out of it. To this extent, clearly, competition is in fact not responsive to the law of supply and demand.

Really efficient distribution requires financial resources considerably in excess of those possessed by the vast majority of these wholesale selling units. The lumber industry as a whole is underfinanced. It is rich in physical property, and poor in working capital. At the same time, its working-capital requirements are rapidly multiplying. Formerly, the railroads carried about six weeks' supply of lumber constantly in transit. Retail dealers and consumers anticipated their requirements from three to six months ahead. Today, the railroads carry in transit the equivalent of only two weeks' supply, and the retail dealers and consumers buy their lumber from hand to mouth. Verily, the consumer has backed right up to the producer.

Industries, generally, only three years ago were pleading for better car supply and more prompt and rapid transportation service. They got both. Assuming that this condition, hitherto unprecedented, of superior transportation efficiency is nevertheless permanent— as for the obvious general welfare we hope it is— one outstanding result in industries generally is that producers must carry a vastly larger proportion of the unsold stocks which heretofore have been more equally divided among producers, distributors and consumers. Under these circumstances, producers will be, so to speak, the balance wheels of trade. They must be prepared to supply promptly, upon demand, large and well-assorted stocks. Their facilities must be flexible, and, hence, their working capital ample.

In many industries maximum efficiency in production is secured in plants of comparatively small physical capacity, plants which individually are not capable of an output in either volume or assortment sufficient to secure maximum economy in wholesale distribution. In these industries—and there are many in this situation —the economies of relatively small physical units of production should be preserved without sacrificing the obvious economies of the larger scale wholesale distribution with its superior flexibility and facilities for service to the retail trade and to consumers.

Secured Through Distributors

To a great extent in many industries this result can be most economically secured through wholesale distributors. But in some industries this can, I believe, be best accomplished by means of wholesale selling agencies handling the output of groups of similarly situated producers. In other industries, greater economy would result through larger unit control of both production and wholesale distribution. The former, in substance, is merely co-operative selling. The latter means merger and consolidation.

In industries whose products are completely standardized, joint selling agencies would probably find their most promising field. In industries producing a wide variety of non-standardized commodities dependent upon patents and trade-marks, corresponding economies will probably be best secured through merger or consolidation. In many industries, there will no doubt be a broad field for both. In still other industries, the process of integration and consolidation has already gone far enough to meet the present-day needs of efficient distribution and service; and, probably, in some instances it has already gone too far, in the sense at least that the stimulus to ingenuity and the impulse to improvement have been materially retarded.

Improvements in Competition

In speaking of sales co-operation and consolidations in production and wholesale distribution, I am talking not about *substitutes for competition* but for the *improvements in competition*, which will secure in actual practice those conditions of bargaining equality and of financial flexibility which characterize free competition in the abstract. Otherwise, in many industries, at least, we shall merely cling to the barren form of competition and lose its practical substance.

The capacity for intelligent self-control would be strengthened in

many industries by wisely-planned financial consolidations in production or wholesale distribution, or both. So long as these do not have the effect of substantially impairing competition to the detriment of public welfare, it is not likely that they will be opposed; or, if opposed, that such opposition would be effective in the courts or in public opinion. The basic intent of the anti-trust acts is to secure the maintenance of free, fair and equal competition. Such a condition is not dependent upon the multiplication of competing units. Competition is not fair or free if it is not equal. And it cannot be equal between competitors of such widely different financial strength, sales facilities, and bargaining power as exists today in the various industries among the hundreds of thousands of separate individual selling units which are constantly besieging the same buyers, seeking the same business, in the same markets.

Another Phase of the Problem

There is another phase of this problem, which, although involving directly neither the anti-trust statutes nor their economic interpretation, deserves mention. On last Labor Day, the Secretary of Labor, Mr. Davis, in a public address in Illinois, said:

"The greatest source of unemployment in this country is the overdevelopment of industry. The fact is that our productive machinery and equipment cannot run three hundred days in the year without producing a stock so large that it cannot all be sold in this country, nor in any and all other countries. "Is it not possible to make it legal to do anything which cheapens the cost of production, stabilizes the labor conditions, and does not restrict competition? The thing that people fear in this regard is an increase in price. "The law says you must not restrict output but the economic law restricts output to the amount which can be sold."

In this address the Secretary of Labor has suggested that the average popular test of competition is the supposed reasonableness or unreasonableness of prices. Accepting that as a common-sense criterion, I believe that a great field for the improvement of efficiency and economy in industry and commerce has been little more than touched, and that its development along lines which I have indicated not only will not impair competition and the protection to the public which it affords, but will make it more equal, more fair, and more free, and hence give greater assurance of the maintenance of fair prices, and the saving of much of the wastes which characterizes the misdirected, ignorant and unequal—although free and unrestricted—competition which today prevails in many of our industries.

Accident Closes King Div. of Allied Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 24, 1926.—A fly wheel on the engine that operates the beater room equipment at the King division of the Allied Paper Mills, exploded Wednesday night while the mill was in full operation with a deafening report that was heard for blocks. That section of the plant was completely devastated. Two sections of the wheel crashed through the roof of the beater room and a third section, weighing over a ton, was hurled about 600 feet and landed near a residence. Fortunately not an employee was seriously hurt.

The most serious damage is due to the fact that the big plant closed immediately and will remain down until such time as repairs are completed. It will take several months to replace the ruined engine. In the meantime strenuous efforts to secure temporary power are being made. The Consumers Power Company is now stretching a cable to the plant and two motors, capable of furnishing 1,000 horse power have been ordered. These will probably be placed within two weeks.

G. H. Gerhpeide, vice president of the company, reports that no estimate of the loss is available at this time. The most serious handicaps are the loss of production and the fact that over 500 employees are out of work and will be idle for some time.

Obituary

Myron E. Battles

[FROM OUR REGULAR CORRESPONDENT]

CLEVELAND, Ohio, July 26, 1926.—Myron E. Battles, long prominent in the paper industry of the country, passed away Sunday morning, July 18, at his summer residence, S. O. M., Center Road, near Mayfield, after an illness of several months.

In 1891 he organized the Union Paper and Twine Company, of which he was treasurer and general manager for thirty years, or until his retirement in 1921 when he moved to California.

For many years Mr. Battles resided on Cadwell avenue, Cleveland Heights. He served Cleveland Heights as Councilman from January, 1903, to December, 1905, and as Mayor from January, 1906, to January 1, 1912.

He was very active in initiating and completing many civic improvements in Cleveland Heights.

Mr. Battles is survived by his widow, Jessie M., his son, John Wade, his mother, Mrs. Mary Battles, and his sister, Mrs. Adelaide Straight.

John Raymond Holman

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 23, 1926.—John Raymond Holman, aged 39, secretary of the Portland Paper Box Company, and a director of the Oregon Bond and Mortgage Company, died suddenly while attending a business luncheon at the Multnomah Hotel in this city on July 15. He suffered a heart attack at table and did not respond to relief treatment.

Mr. Holman came of a native Oregon pioneer family. He had been with the Portland Paper Box Company as an executive for more than fourteen years, and was prominent in many civic and social organizations. He was active in the Knights Templar and in the Shrine.

The family reside at 170 Parkside Lane, where a widow and a young son, Crellin, survive.

Funeral services were held Saturday, July 17, from St. Stephen's pro-Cathedral. Dean Ramsey was in charge of the services.

H. A. Grover

[FROM OUR REGULAR CORRESPONDENT]

CLEVELAND, Ohio, July 19, 1926.—Henry A. Grover, aged fifty-four years, manager of the Wrapping Paper Department of Kingsley Paper Company, for the past nineteen years, died at the Cleveland Clinic Hospital, on Friday evening, July 9, at six forty o'clock. He was a member of the City Club, Kiwanis Club, Loyal Order of Moose and a Macabee.

Prior to his connection with the Kingsley Paper Company, Mr. Grover was with the R. P. Andrews Paper Company of Washington, D. C.

Mr. Grover had many close friends and will be missed by them as well as his business associates.

He is survived by his widow

Charles H. Flandrau

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., July 26, 1926.—Charles H. Flandrau, for many years chief engineer at the Fort Edward mill of the International Paper Company, died last Sunday in North Creek following a lingering illness. Mr. Flandrau during his connection with the International Paper Company, was regarded as an expert paper mill man and a valued employee of the company. Ill health forced his retirement some time ago and since then he has been making his home at North Creek. The deceased was a member of Fort Edward Lodge of Masons and the Masonic funeral service was conducted Thursday in Troy, interment being made in Clemons-on-Lake-Champlain.

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 24, 1926

SUMMARY

Cigarette paper .....2477 cs.
Wall paper .....257 rolls, 9 bls., 25 cs.
Paper hangings .....26 bls., 2 cs.
Hanging paper .....32 cs.
Printing paper .....63 cs.
Wrapping paper .....51 bls., 9 cs.
Packing paper .....58 bls.
Pergamyn paper .....55 cs.
Tinfoil paper .....22 cs.
Gold coated paper .....2 cs.
Surface coated paper .....15 cs.
Metal paper .....3 cs.
Colored paper .....6 cs.
Writing paper .....3 cs.
Letter paper .....8 cs.
Stencil paper .....9 cs.
Decalcomania paper .....5 cs.
Condenser paper .....4 cs.
Tissue paper .....14 cs.
Drawing paper .....6 cs.
Filter paper .....34 bls., 16 cs.
Trunk paper .....4 cs.
Tracing paper .....14 cs.
Silk paper .....1 cs.
Straw board .....918 rolls
Miscellaneous paper.....60 rolls, 191 bls., 347 cs.

CIGARETTE PAPER

R. J. Reynolds Tobacco Co., Sarcoxie, St. Nazaire, 1420 cs.
De Manduit Paper Corp., Sarcoxie, St. Nazaire, 244 cs.
American Tobacco Co., Sarcoxie, Bordeaux, 800 cs.
M. Spiegel & Son, Roussillon, Bordeaux, 4 cs.
P. J. Schweitzer, Paris, Havre, 5 cs.
P. J. Schweitzer, Marigot, Havre, 4 cs.

WALL PAPER

Janeway & Carpender, Munchen, Bremen, 257 rolls.
M. S. Zabrisbie, Munchen, Bremen, 20 cs.
F. J. Emmerich, Baltic, Liverpool, 1 ble.
F. J. Emmerich, Westphalia, Hamburg, 2 bls.
Globe Shipping Co., Westphalia, Hamburg, 3 bls.
F. J. Emmerich, Resolute, Hamburg, 3 bls.
F. J. Emmerich, Homeric, Southampton, 2 cs.
Whiting & Patterson Co., Homeric, Southampton, 3 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Caronia, Liverpool, 21 bls.
W. H. S. Lloyd & Co., Caronia, Liverpool, 2 cs.
A. C. Dodman, Jr., Inc., Laconia, Liverpool, 5 bls.

HANGING PAPER

Keller-Dorian Paper Co., Caronia, Liverpool, 32 cs.

PRINTING PAPER

Maurice O'Meara Co., Munchen, Bremen, 26 cs.
Martin & Bechtold, Munchen, Bremen, 8 cs.
Japan Paper Co., Minnekahda, London, 7 cs.
E. Dietzgen & Co., Westphalia, Hamburg, 5 cs.
Perkins, Goodwin & Co., Westphalia, Hamburg, 17 cs.

WRAPPING PAPER

Hensel, Bruckman & Lorbacher, Westphalia, Hamburg, 5 cs.
International Accep. Bank, Westphalia, Hamburg, 51 bls.
Hensel, Bruckman & Lorbacher, Resolute, Hamburg, 4 cs.

PACKING PAPER

Steiner Paper Corp., Pennsylvania, Greaker, 58 bls.

PERGAMYN PAPER

F. C. Strype, Westphalia, Hamburg, 13 cs.
F. C. Strype, Resolute, Hamburg, 42 cs.

TINFOIL PAPER

Enoch Morgan Sons Co., Laconia, Liverpool, 22 cs.

GOLD COATED PAPER

Weiss Forwarding Co., Munchen, Bremen, 2 cs.

SURFACE COATED PAPER

S. Hanfling & Co., Westphalia, Hamburg, 1 cs.
Whiting & Patterson Co., Westphalia, Hamburg, 12 cs.
Phoenix Shipping Co., Resolute, Hamburg, 2 cs.

METAL PAPER

Hensel, Bruckman & Lorbacher, Westphalia, Hamburg, 3 cs.

COLORED PAPER

E. Dietzgen & Co., Westphalia, Hamburg, 6 cs.

WRITING PAPER

W. J. Byrnes, Westphalia, Hamburg, 3 cs.

LETTER PAPER

B. Altman & Co., Homeric, Southampton, 8 cs.

STENCIL PAPER

Arlac Dry Stencil Co., Resolute, Hamburg, 9 cs.

DECALCOMANIA PAPER

C. W. Sellers, Resolute, Hamburg, 5 cs.

CONDENSER PAPER

F. C. Strype, Volendam, Rotterdam, 4 cs.

TISSUE PAPER

S. Gilbert, Volendam, Rotterdam, 11 cs.
J. B. Mast & Co., C. Biancamano, Genoa, 3 cs.

DRAWING PAPER

Keuffel & Esser, Caronia, Liverpool, 5 cs.
H. Reeve Angel & Co., Inc., Minnekahda, London, 1 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Minnekahda, London, 10 cs.
H. Reeve Angel & Co., Inc., Homeric, Bordeaux, 24 bls., 2 cs.
G. Lueders & Co., Roussillon, Bordeaux, 10 bls.
C. Schleicher Schull Co., Resolute, Hamburg, 4 cs.

TRUNK PAPER

P. H. Petry & Co., Westphalia, Hamburg, 4 cs.

TRACING PAPER

International Forwarding Co., Westphalia, Hamburg, 14 cs.

SILK PAPER

International Forwarding Co., Paris, Havre, 1 cs.

STRAW BOARD

Thompson & Norris Co., Volendam, Rotterdam, 139 rolls.
Perkins, Goodwin & Co., Volendam, Rotterdam, 57 rolls.
A. Vuyk, Volendam, Rotterdam, 558 rolls.
State Bank, Volendam, Rotterdam, 164 rolls.

MISCELLANEOUS PAPER

Keuffel & Esser, Volendam, Rotterdam, 23 cs.
Foreign Paper Mills, Volendam, Rotterdam, 12 cs.
L. Bamberger & Co., Stockholm, Gothenburg, 101 bls., 60 rolls.
E. H. Sergeant & Co., Stockholm, Gothenburg, 1 cs.
Japan Paper Co., C. Biancamano, Genoa, 96 cs.
Adelphi Co., Transylvania, Glasgow, 2 bls.
Perry, Ryer & Co., Transylvania, Glasgow, 47 cs.
M. Spiegel & Sons, Westphalia, Hamburg, 18 cs.
J. C. Murray, Westphalia, Hamburg, 4 cs.
H. S. Chalfont, Westphalia, Hamburg, 60 bls.
Maurice O'Meara Co., Westphalia, Hamburg, 28 bls.
Japan Paper Co., Paris, Havre, 2 cs.
Standard Products Corp., Paris, Havre, 96 cs.
The Sutbrug Co., Paris, Havre, 15 cs.
Cheramy, Paris, Havre, 4 cs.
Arnold, Constable & Co., Paris, Havre, 3 cs.
Guibout freres, Paris, Havre, 18 cs.
Keller-Dorian Paper Co., Homeric, Southampton, 2 cs.
A. C. Dodman, Jr., Inc., Marigot, Havre, 6 cs.

RAGS, BAGGINGS, ETC.

Chase National Bank, Munchen, Bremen, 82 bls. rags.
M. Maier Papermill Supply Co., Volendam, Rotterdam, 229 bls. bagging.
The Stone Bros. Co., Inc., Volendam, Rotterdam, 89 bls. rags.
The Barrett Co., Volendam, Rotterdam, 207 bls. rags.
S. Silberman & Co., Volendam, Rotterdam, 87 bls. rags.
Galante Bros., Inc., Volendam, Rotterdam, 28 bls. rags.
Maurice O'Meara Co., Volendam, Rotterdam, 37 bls. bagging.
J. Cohen Son & Co., Caronia, Liverpool, 7 bls. paper stock.
A. H. Searle, Caronia, Liverpool, 164 bls. paper stock.
The Stone Bros. Co., Inc., Sarcoxie, St. Nazaire, 457 bls. rags.
Anglo-South American Trust Co., Sarcoxie, St. Nazaire, 72 bls. rags.
P. Berlowitz, Sarcoxie, St. Nazaire, 493 bls. rags.
Goldman, Sachs & Co., Sarcoxie, St. Nazaire, 137 bls. rags.
E. J. Keller Co., Inc., Sarcoxie, St. Nazaire, 91 bls. rags.
S. Silberman & Co., Sarcoxie, Bordeaux, 507 bls. rags.
Central National Bank, Capulin, Hull, 85 bls. rags.
Grace National Bank, Cabo Hatteras, Marseilles, 285 bls. rags.
Royal Manfg. Co., Cabo Hatteras, Genoa, 44 bls. bagging.
A. W. Fenton, Inc., A. Farmer, London, 78 bls. rags.
A. W. Fenton, Inc., Transylvania, Glasgow, 86 bls. rags.
Central National Bank, Transylvania, Glasgow, 58 bls. rags.
Central National Bank, Transylvania, Glasgow, 51 bls. bagging.
Chase National Bank, N. Y. City, Bristol, 95 bls. bagging, 29 bls. rags.
American Express Co., Baltic, Liverpool, 22 bls. rags.
A. W. Fenton, Inc., West Arrow, Antwerp, 47 bls. rags.
Royal Manfg. Co., West Arrow, Antwerp, 42 bls. rags.
Royal Manfg. Co., West Arrow, Antwerp, 45 bls. thread waste.
Castle & Overton, Inc., West Arrow, Antwerp, 190 bls. bagging.
Castle & Overton, Inc., West Arrow, Antwerp, 101 bls. rags.
C. R. Spence, West Arrow, Antwerp, 80 bls. rags.
The Stone Bros. Co., Inc., West Arrow, Antwerp, 8 bls. rags.

(Continued on page 64)

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Imports of Paper and Paper Stock

(*Continued from page 62*)

E. Butterworth & Co., Inc., West Arrow, Antwerp, 72 bls. bagging.
I. Horwitz, Westphalia, Hamburg, 41 bls. rags.
E. J. Keller Co., Inc., Westphalia, Hamburg, 200 bls. rag pulp.
M. Snedeker Corp., Westphalia, Hamburg, 53 bls. rags.
E. J. Keller Co., Inc., Blue Triangle, Oran, 78 bls. bagging.
E. J. Keller Co., Inc., Blue Triangle, Oran, 50 bls. rags.
American Exchange National Bank, Blue Triangle, Leghorn, 122 bls. rags.
National Bank of Commerce, Blue Triangle, Leghorn, 78 bls. bagging.
Katzenstein & Keene, Inc., Fenchurch, Marseilles, 185 bls. rags.
A. W. Fenton, Inc., Fenchurch, Marseilles, 42 bls. rags.
C. R. Spence, Fenchurch, Marseilles, 75 bls. rags.
L. H. Abenheimer, Fenchurch, Barcelona, 19 bls. bagging.
N. Y. Trust Co., Resolute, Hamburg, 41 bls. rags.
S. Silberman & Co., Resolute, Hamburg, 97 bls. rags.
Chase National Bank, City of Eureka, Leghorn, 228 bls. rags.
American Exchange National Bank, City of Eureka, Leghorn, 308 bls. rags.
A. W. Fenton, Inc., City of Eureka, Leghorn, 23 bls. rags.
V. Gaiaup, Marigot, Havre, 73 bls. rags.
Chase National Bank, Marigot, Havre, 203 bls. rags.
Guaranty Trust Co., Marigot, Havre, 160 bls. rags.
A. W. Fenton, Inc., Marigot, Havre, 340 bls. rags.
National City Bank, Marigot, Havre, 92 bls. rags.
Equitable Trust Co., Marigot, Havre, 55 bls. rags.
E. J. Keller Co., Inc., Innoko, Rotterdam, 74 bls. rags.
E. J. Keller Co., Inc., Patagonier, Antwerp, 255 bls. rags.
Castle & Overton, Inc., Patagonier, Antwerp, 72 bls. rags.
Castle & Overton, Inc., H. Olav, Copenhagen, 157 bls. rags.
Castle & Overton, Inc., Istria, Genoa, 60 bls. rags.

OLD ROPE

Brown Bros. & Co., Volendam, Rotterdam, 203 coils.
Brown Bros. & Co., Stockholm, Gothenburg, 49 coils.
Brown Bros. & Co., N. Y. City, Bristol, 127 coils.
Central National Bank, Capulin, Hull, 112 coils.

MANILA ROPE

International Purchasing Co., Tyrifjord, Oslo, 58 coils.
Ellermans' Wilson Line, Minnekalda, London, 52 coils.
United Fruit Co., Baltic, Liverpool, 68 pkgs.

CORDAGE

Disbrow Cordage Co., Volendam, Rotterdam, 484 coils.

WOOD PULP

Chemical National Bank, Tyrifjord, Oslo, 600 bls. sulphite.
J. Anderson & Co., Tyrifjord, Sarpsborg, 825 bls. sulphite.
Buck, Kiaer & Co., Inc., Tyrifjord, Hommelvik, 3000 bls. sulphite.
E. M. Sergeant & Co., Tyrifjord, Drammen, 1200 bls. sulphite.
Scandinavian Pulp Agency, Inc., Munchen, Bremen, 1250 bls. wood pulp.
Castle & Overton, Inc., Munchen, Bremen, 1544 bls. wood pulp.
Johanson, Wales & Sparre, Inc., Stockholm, Gothenburg, 125 bls. sulphate.
J. Anderson & Co., Stockholm, Gothenburg, 375 bls. sulphite.
E. M. Sergeant & Co., Stockholm, Gothenburg, 473 bls. dry soda pulp.
Price & Pierce, Ltd., Stockholm, Gothenburg, 5760 bls. wet pulp.
J. Anderson & Co., Milos, Hernosand, 600 bls. sulphate, 100 tons.
J. Anderson & Co., Milos, Hernosand, 3000 bls. sulphite, 500 tons.
Johanson, Wales & Sparre, Inc., Milos, Hernosand, 150 bls. sulphite, 25 tons.
Bulkley, Dunton & Co., Milos, Soderhamn, 1375 bls. sulphite, 275 tons.
Bulkley, Dunton & Co., Milos, Soderhamn, 1500 bls. sulphate, 300 tons.
J. Anderson & Co., Milos, Soderhamn, 3095 bls. sulphate, 615 tons.
J. Anderson & Co., Milos, Soderhamn, 925 bls. sulphite, 185 tons.
Scandinavian Pulp Agency, Inc., Orla, Skutskar, 2531 bls. dry pulp, 355 tons.
Scandinavian Pulp Agency, Inc., Orla, Sundsvall, 2500 bls. sulphate, 500 tons.
Scandinavian Pulp Agency, Inc., Orla, Sundsvall, 1675 bls. sulphite, 315 tons.
M. Gottesman & Co., Inc., Orla, Sundsvall, 1500 bls. sulphite, 250 tons.
National City Bank, Orla, Sundsvall, 1375 bls. sulphite, 275 tons.
Johanson, Wales & Sparre, Inc., Orla, Sundsvall, 5375 bls. sulphite, 1035 tons.
Bulkley, Dunton & Co., Orla, Sundsvall, 1000 bls. chemical pulp, 200 tons.
Bulkley, Dunton & Co., Orla, Sundsvall 250 bls. sulphite, 50 tons.
Bulkley, Dunton & Co., Orla, Iggesund, 500 bls. sulphate, 100 tons.
Sanitary Textile Corp., Westphalia, Hamburg, 120 bls. wood pulp.
J. Anderson & Co., Pennsylvania, Greaker, 660 bls. sulphite.
The Borregaard Co., Inc., Pennsylvania, Greaker, 3216 bls. sulphite.
Buck, Kiaer & Co., Inc., Pennsylvania, Greaker, 275 bls. sulphite.
J. Anderson & Co., Pr. Harding, Bremen, 135 bls. wood pulp, 27 tons.

WOOD FLOUR

B. L. Soberski, Pennsylvania, Greaker, 2550 bags.

CASEIN

T. M. Duche & Sons, Romney, Buenos Aires, 834 bags.
T. M. Duche & Sons, Sarcoxie, Bordeaux, 188 bags, 15,112 kilos.
Atterbury Bros., Inc., Sarcoxie, Bordeaux, 663 bags, 50,214 kilos.
Kalbfleisch Corp., Munargo, Buenos Aires, 2695 bags.

CHINA CLAY

Central Union Trust Co., N. Y. City, Bristol, 150 casks.
National City Bank, N. Y. City, Bristol, 515 bags.

BALTIMORE IMPORTS

WEEK ENDING JULY 24, 1926

National City Bank, Capulin, Hull, 285 bls. rags.
Anglo-South American Trust Co., Pennsylvania, Copenhagen, 500 bls. bagging.
S. Schapira & Sons, Marigot, Havre, 4 bls. rags.
Baltimore Trust Co., Marigot, Havre, 79 bls. bagging.
Castle & Overton, Inc., Hannover, Germany, 734 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JULY 24, 1926

T. M. Duche & Sons, Romney, Buenos Aires, 584 bags casein.
First National Bank of Boston, Romney, Buenos Aires, 834 bags casein.
J. Anderson & Co., Pennsylvania, Greaker, 7015 bls. sulphite pulp.
The Borregaard Co., Inc., Pennsylvania, Greaker, 384 bls. sulphite pulp.
E. J. Keller Co., Inc., Seattle Spirit, Hamburg, 153 bls. rags.
E. J. Keller Co., Inc., Seattle Spirit, Rotterdam, 208 bls. bagging.
E. J. Keller Co., Inc., Seattle Spirit, Bremen, 68 bls. bagging.
E. J. Keller Co., Inc., Seattle Spirit, Bremen, 93 bls. rags.
Castle & Overton, Inc., ——, Germany, 400 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING JULY 24, 1926

Castle & Overton, Inc., Bolivian, England, 89 bls. rags.
Castle & Overton, Inc., West Totant, England, 116 bls. paper stock.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 24, 1926

The Stone Bros. Co., Inc., Sarcoxie, St. Nazaire, 1236 bls. rags.
Katzenstein & Keene, Inc., Sarcoxie, St. Nazaire, 226 bls. rags.
Salomon Bros. & Co., Sarcoxie, St. Nazaire, 47 bls. rags.
D. I. Murphy, Sarcoxie, St. Nazaire, 90 bls. rags.
S. Silberman & Co., Sarcoxie, Bordeaux, 197 bls. rags.
Castle & Overton, Inc., Sarcoxie, Bordeaux, 716 bls. rags.
Brown Bros. & Co., Capulin, London, 84 bls. rags.
Paper Service Co., Capulin, London, 2 cs. paper.
E. J. Keller Co., Inc., Isarco, Algiers, 150 bls. rags.
E. J. Keller Co., Inc., Isarco, Algiers, 117 bls. rope.
D. I. Murphy, West Arrow, Antwerp, 207 bls. rags.
Strupp & Co., West Arrow, Antwerp, 159 bls. rags.
Castle & Overton, Inc., West Arrow, Antwerp, 1701 bls. rags.
McBlaine & Co., West Arrow, Antwerp, 43 bls. rags.
S. Birkenstein & Sons, West Arrow, Antwerp, 39 bls. old rope.
S. E. Ingber, West Arrow, Antwerp, 52 bls. rags.
Central National Bank, West Arrow, Antwerp, 138 bls. rags.
G. W. Millar & Co., West Arrow, Antwerp, 99 bls. rags.
Darmstadt, Scott & Courtney, West Arrow, Antwerp, 39 bls. rags.
Union National Bank, West Arrow, Antwerp, 18 bls. rags.
Walworth & Son, West Arrow, Antwerp, 59 bls. thread waste.
Philadelphia Girard National Bank, Blue Triangle, Leghorn, 570 bls. rags.
Philadelphia Girard National Bank, Fenchurch, Marseilles, 516 bls. rags.
The Stone Bros. Co., Inc., Fenchurch, Marseilles, 172 bls. rags.
Union National Bank, Fenchurch, Marseilles, 295 bls. rags.
D. I. Murphy, Fenchurch, Marseilles, 86 bls. rags.
Central National Bank, Fenchurch, Barcelona, 76 bls. rags.
Philadelphia Girard National Bank, City of Eureka, Palermo, 139 bls. rags.
Brown Bros. & Co., City of Eureka, Naples, 146 bls. rags.
Castle & Overton, Inc., City of Eureka, Leghorn, 218 bls. rags.
Southwark National Bank, City of Eureka, Leghorn, 60 bls. cotton waste.
J. Anderson & Co., Pennsylvania, Greaker, 1100 bls. sulphite pulp.
E. M. Sergeant & Co., Pennsylvania, Greaker, 150 bls. chemical pulp.
W. Schall & Co., Marigot, Havre, 199 bls. rags.
Central National Bank, Marigot, Havre, 1322 bls. rags.
Brown Bros. & Co., Marigot, Havre, 412 bls. rags.
Southwark National Bank, Marigot, Havre, 102 bls. rags.
National Bank of Commerce, Marigot, Havre, 366 bls. rags.
National Bank of Commerce, Marigot, Havre, 24 bls. bagging.
Stephano Bros., Marigot, Havre, 30 cs. cigarette paper.
National City Bank, Marigot, Havre, 38 bls. cotton waste.
Castle & Overton, Inc., Clontarf, Greece, 192 bls. rags.
Castle & Overton, Inc., V. Skogland, Germany, 47 bls. rags.
Castle & Overton, Inc., Nevada, Denmark, 623 bls. rags.
Castle & Overton, Inc., Nevada, Denmark, 144 bls. bagging.
Castle & Overton, Inc., Nevada, Denmark, 91 bls. old rope
Castle & Overton, Inc., Hannover, Germany, 2569 bls. wood pulp.

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New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, July 28, 1926.

Trading on the local paper market during the past week was mostly along routine lines and little expansion is anticipated until the end of the holiday season. Demand for the various grades is about as active as expected at this time of the year and, judging from the volume of inquiries being received for future business, the prospects for an excellent autumn record are bright. Sales forces of the leading paper houses have been relaxing their efforts, for the time being, but expect to be in better shape than ever for a strenuous and successful wind-up of the year.

News print is still in good request and the market is in a very sound condition. Prices are unchanged and are generally holding up to the schedule. The production of news print is proceeding in heavy volume with the result that spot supplies are slightly more plentiful. Shipments of news print on contract are moving into consumption at a normal pace.

The various grades of paper are in slightly improved demand. Prices are somewhat firmer, on the whole. Moderate activity is being experienced in the fine paper division, with prices holding up to previously quoted levels. The tone of the coarse paper market is steady, while the request for wrapping paper is slightly above normal for the summer season.

Mechanical Pulp

An improved feeling has developed for both imported and domestic ground wood. Supplies of domestic mechanical pulp are reported to be sufficient to take care of immediate requirements, as a result of increased grinding operations. Prices remain fairly steady and reports of shading are infrequent. Domestic mechanical pulp is offered at from $28 to $32 a ton, f.o.b. mill, while imported moist ground wood is quoted at from $36 to $38 a ton, ex dock, and dry at from $37 to $40 a ton.

Chemical Pulp

As usual at this time of the year, the prices of both imported and domestic chemical pulp are generally softer. Open water shipments from the Baltic have been steadily increasing of late with the result that spot supplies are more ample than for some time. Imported chemical pulp is in a very strong position, however, and it is reported that approximately 33 per cent of the Swedish sulphite production for next year, and 40 per cent of the sulphate output, is already contracted for.

Old Rope and Bagging

No new developments have transpired in the old rope and bagging market. Offerings of old rope are about sufficient to take care of immediate requirements. Foreign manila rope is now offered at from 4.25 to 4.75 and domestic at from 5.25 to 5.50. The bagging market is practically unchanged, with prices holding up to previous levels.

Rags

The domestic rag situation has improved somewhat, and the volume of inquiries in the market for future business is very encouraging. All grades of roofing rags are in fair request and prices are being well maintained despite keen competition for desirable orders. A better sentiment is also developing for imported rags although trading at present is rather light.

Waste Paper

Supplies of waste paper are still below normal and the market is exhibiting a firm undertone. Old kraft machine compressed bales are in particular good demand just now and are selling at from 1.90 to 2.00. All the other sections of the paper stock market are unchanged, with the exception of No. 1 mixed paper, which is now quoted at from .45 to .50.

Twine

While the twine market was rather lifeless during the past week, the position of the industry is quite satisfactory for the time of the year, and a general expansion is confidently looked for by leading authorities on the market in the autumn. Twine prices are considered below normal at present, and a general advanace may be expected when the demand becomes more active.

Midsummer Routine in Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 26, 1926.—Midsummer routine has set in with a spotty market. Inventories have been taken and for a time the buying will be of the hand-to-mouth variety, according to leaders in the paper trade here. There has been a fair demand for the fine grades of paper, the specialty houses are doing about all they can handle and there is a sign of improvement in the raw stock division, but actual increase in sales has not registered.

There is every indication, however, and it is generally agreed, that by the latter part of next month the market will be such that orders will be absolutely necessary as stock will be low. Just now there is a tendency to wait for a break in prices but the "wise ones" declare that such waiting is futile because prices will remain as they are for some time to come.

For the first time in months the writer has found a few of the fine grade houses that actually need business. Executives are frank in admitting it. Of course, there are those merchants who are always doing a rushing business, and they are doing it now. On the other hand there are a few around the town who come right out in the open and say "We're up against it." This condition, however, is believed to be a temporary one. Printers will soon be active filling orders for the fall politics and advertising campaigns. They are ready and waiting. So are the paper merchants.

There is a pretty fair demand in the wrapping paper division. This follows a general betterment in various textile centers of New England and an improved general merchandise business in greater Boston.

One veteran in the raw stock business said this week: "Well, this week has been something like it. I've sold a few tons. The mills seem to be in the market and now we're going to get our share." This is a new angle for this branch of the industry as it has been an unusually quiet three months.

Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 28, 1926.—The Bryant Paper Company has been awarded the contract for furnishing the Government Printing Office with 300,000 pounds of 50 per cent rag M. F. book paper in 48 in. rolls at 9.24 cents per pound, bids for which were received on July 14.

The Government Printing Office will receive bids on August 2 for 80,000 pounds (32,000 sheets) of No. 2 quality 25 x 30. No 20 binders board.

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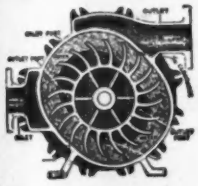
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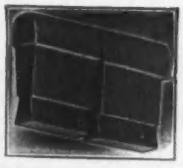
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Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, July 21, 1926.

During the past week, trading in the local chemical market continued along routine lines. The spot market was particularly quiet. Prices, however, are being well maintained, and, apparently, cases of shading are infrequent. Contract withdrawals are generally proceeding in good volume, and prospects for an active autumn trade are considered bright by most of the leading authorities on the market.

BLANC FIXE.—Demand for blanc fixe is somewhat lighter, and, while stocks on hand are rather limited, producers are in a better position to take care of prompt shipment business. Prices are holding up very well to former levels. The pulp is still selling at $60 a ton, in bulk, while the powder is quoted at from 4¼ to 4½ cents a pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. Production is being well adjusted to consumption and stocks on hand are not large. Prices are practically unchanged. Bleaching powder is quoted at from $2 to $2.40 per 100 pounds, in large drums, at works, according to quantity.

CASEIN.—Domestic grades of casein are slightly lower, but very little trading is being done at the present time. Imported casein is in fair request at unaltered prices. Foreign casein is still selling at from 18 to 20 cents a pound, while domestic casein is now offered at from 17 to 20 cents a pound, all in bags.

CAUSTIC SODA.—Shipments of caustic soda have been proceeding in large volume during the past two weeks, and manufacturers have not experienced any seasonal depression so far this summer. The spot market remains rather lifeless. Caustic soda is still selling at from $3.10 to $3.15 per 100 pounds, in large drums, at works. Spot car lots are quoted at from $3.20 to $3.25 per 100 pounds.

CHINA CLAY.—There is a moderate demand for imported china clay at present and prices are being steadily maintained. Domestic clay is attracting some attention, but the movement is mostly routine. The price of foreign china clay ranges from $13 to $22 a ton, in bulk, ship side, while washed domestic clay is quoted at from $8 to $9 a ton, at mine, and pulverized at $10 a ton.

CHLORINE.—The chlorine market remains in a sound condition. A good volume of inquiries are being received for future business and all signs point to a general expansion in the near future. Chlorine is still selling at 4 cents a pound, in tanks, or multi-unit cars, at works, on contract, while the spot price is from 4¼ to 4¾ cents a pound.

ROSIN.—The local rosin market exhibits a strong undertone, with prices continuing to point towards higher levels. A good volume of business is being transacted from day to day, and the future outlook is regarded as promising. At the naval stores, the grades of rosin used in the paper mills are now quoted at from $15 to $15.20 per 280 pounds, ex dock, in barrels.

SALT CAKE.—Conditions in the salt cake market are decidedly healthy and at the present time this section is the bright particular spot of the chemical trade. The demand is quite active and supplies are difficult to secure, due to the scarcity of accumulations, while prices are very firm. Salt cake is still quoted at from $18 to $20 a ton, in bulk, at works.

SODA ASH.—The soda ash market is steady in tone. Contract shipments are being well maintained and there are few signs of any slackening in the movement. While little new business is being transacted, this condition is considered to be only seasonal. Contract quotations, in car lots, at works, per 100 pounds, are quoted as follows: in bulk, $1.25; in bags, $1.38, and in barrels, $1.63.

STARCH.—While the demand for starch is slightly less than of late, the market continues steady, and prices are well maintained. Shipments on contract are proceeding in a satisfactory manner. Special paper maker's starch continues to be quoted at $3.32 per 100 pounds, in bags, and at $3.40 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Quietness continues to reign in the sulphate of alumina market. Prices, however, remain steady, with little evidence of concessions. Contract withdrawals are moving in routine volume. Commercial grades of sulphate are selling at from $1.40 to $1.45, in bags, at works, in car lots. The iron free is offered at from $2 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—An increased inquiry is being experienced for sulphur and the market is in a sound condition. Prices remain unchanged and the schedule is being well maintained. Shipments against contract are proceeding at a good pace. Sulphur is still quoted at from $18 to $19 a ton, in bulk, at mine, and from $21 to $23 a ton, ship side.

TALC.—No new developments have transpired in the talc market. Most of the business being transacted at present is merely routine. Prices continue to be well maintained. Some inquiry has been reported for future business and a revival of the industry may be expected in the fall. Domestic talc is offered at from $15 to $18 a ton, at mine. French talc is quoted at from $18 to $22 a ton, ship side.

WEATHER AFFECTS TORONTO TRADE

(*Continued from page 30*)

the Canadian Barking Drum Company, Toronto, has resigned his position with that organization.

J. A. Northey, vice-president of the Telfer Paper Box Company, Toronto, and wife, have gone on an extended trip to the Pacific Coast.

John Hunt, purchasing agent of the Don Valley Paper Company, Toronto, is enjoying a holiday at his old home in Burford, Ont.

E. S. Munroe, of the Wilson-Munroe Paper Company, T. J. Macabe, of Buntin, Reid & Co., Toronto, and F. W. Halls, of the Fred W. Halls Paper Company, Toronto, were in Montreal recently on business.

W. T. Halls, of the Fred W. Halls Paper Company, Toronto, is enjoying a holiday at his summer home on the Georgian Bay, near Owen Sound.

Arthur Camp, formerly of the Michigan Paper Company, Plainsville, Mich., has been appointed assistant superintendent of the Montrose Division of the Provincial Paper Company at Thorold, Ont., succeeding James Raines, who has gone to Cleveland, Ohio.

The annual picnic of the employees of the Montrose Division of the Provincial Paper Mills, Thorold, Ont., was held recently to Queenston Heights and an enjoyable time was spent. There was a good attendance and several athletic events were keenly contested.

W. T. Coles, of the "Morning Herald," Sydney, Australia, was in Toronto recently and also spent some time visiting pulp and paper mills in Ontario and Quebec.

Ed. McWhirter, superintendent of the Barker Division of the Provincial Paper Mills at Georgetown, Ont., is spending a holiday in Port Arthur, Ont., and Duluth, Minn.

To Represent Missisquoi Pulp & Paper Co.

CHICAGO, July 12, 1926.—James Forsythe, of the Forsythe Paper Company, 10 South LaSalle street, has taken on the representation of the Missipuoi Pulp an Paper Company in the West.

Mr. Forsythe has long been identified with the paper industry and has spent the past twenty years in Chicago as a mill representative.

The Seibert Paper Company, specialists in kraft and glassine products, formerly represented Missispuoi in the West, but they plan to concentrate on these lines solely.